THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
Railway Engineer · TRANSPORT · The Railway News
The Railway Times · Herapath's Railway Journal · RAILWAY RECORD.
RAILWAYS ILLUSTRATED · ESTABLISHED 1835 · RAILWAY OFFICIAL GAZETTE

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1
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Annual subscription £2 5s. 0d. post free. Single copies, One shilling
Registered at the G.P.O. as a newspaper. Entered as second-class matter in U.S.A.

Vol. 92] FRIDAY, FEBRUARY 3, 1950 [No. 5

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DIESEL RAILWAY TRACTION

The February issue of this RAILWAY GAZETTE *publication, illustrating and describing developments in Diesel Railway Traction, is now ready, price 2s.*

Transport Integration in Ulster

THE first annual report and accounts of the Ulster Transport Authority, of which Major F. A. Pope is Chairman, were received shortly before we closed for press. They cover the year to September 30 last and show that the Authority, which controls road and rail transport in Northern Ireland with the exception of the Great Northern Railway (Ireland), operated at a loss of £164,938. There was a profit of £359,231 on road passenger services, but railways ran at a loss of £254,454 and road freight traffic showed a debit of £93,128. It is clear that in its first year the Authority has made considerable progress towards the integration of road and rail in the Six Counties. It has achieved very cordial and co-operative relations with the trade unions, with the result that a draft scheme of interchangeability of operating staffs has been prepared. There can be no doubt that when this is completed it will represent a considerable step forward towards the objects laid down in the Transport Act (Northern Ireland), 1948, under which the authority was established. Agreement has already been achieved in the interchangeability of clerical staffs. Moreover, an arrangement has been reached with the unions on the direction of traffic; as a result the Authority has complete freedom in the working of traffic so as to provide an economic and efficient integrated service. It is expected that for various reasons net revenue during the coming year will be less than during the period for which the report has been issued, but it is hoped by the end of three years the corner may be turned, assuming that there is no serious slump in trade and consequent unemployment and that prices generally and the level of salaries and wages remain reasonably constant. It is hoped that before the end of this period, the new scheme for the basis of rates and fares and conditions of carriage will have been brought before the Transport Tribunal, and that this scheme will reflect all the altered operating methods in the re-organised transport undertaking.

Wage Increases in 1949

LAST year, the average increase in weekly wages in this country was the lowest since 1939, and was equivalent to between 1½ and 2 per cent. This compares with an increase of 4 per cent. in the previous twelve months and 5 per cent. in 1947. Stoppages of work arising from industrial disputes resulted in a loss of 1,808,000 working days and was the lowest since 1943. Figures published in the January issue of the *Ministry of Labour Gazette* show that 5,198,500 workers received an aggregate wage increase of £1,073,700. Many important industries, however, including the engineering industries, showed no general increase at all during the period under review, though many claims have been brought forward and are still under consideration by employers and unions. Normal weekly hours of labour were reduced by an average of 1½ hours for about 1,000,000 workers. With regard to the railway service, certain traffic, goods and cartage, and carriage and wagon staffs, involving about 10,000 employees in rural areas, received an increase of 1s. a week last autumn.

Materials Inspection Organisation

MATERIALS inspection on British Railways is to be reorganised in the near future with the object of enabling this essential work to be carried out with greater economy and efficiency. This decision follows the appointment of Mr. J. W. Brown to the position of Materials Inspection Officer at Railway Executive headquarters in August last year. For the purpose of the reorganisation it is proposed to divide the country into four distinct areas, with area headquarters at Derby, Doncaster, Glasgow, and Swindon, and the inspectors will carry out their work on behalf of all Regions of British Railways at the works of contractors situated within their area. This division of the inspection organisation into areas has been designed to give a reasonable balance of work in each case and at the same time to reduce to a minimum the time spent by the inspectors in travelling. The boundaries of the inspecting areas will more or less coincide with those of the London Midland, Eastern & North Eastern, Scottish, and Western Regions, and any work of this nature in the Southern Region will be carried out by the staff of other areas.

Progress of British Road Services

TWO years ago, on February 3, 1948, the first meeting of the Road Transport Executive was held, Major-General G. N. Russell, Chairman of the Executive, presiding. There was a further development in June last year, when the Minister of Transport availed himself of his powers under the Transport Act, 1947, to set up the Road Passenger Executive, and also the Road Haulage Executive to deal with goods traffic by road. During the past two years, some 2,000 concerns controlling more than 40,000 vehicles and trailers have been taken over, and the present mileage operated by British Road Services is more than 10,000,000 a week. Staff employed by the R.H.E. number 66,000. From January 1 this year, Pickfords became the Special Traffic (Pickfords) Division of the Executive, while the other eight divisions are now divided into 31 districts, under which there will shortly be more

than 300 groups operating up to 200 vehicles each. A full range of staff negotiating machinery has been introduced and a quarterly staff magazine will make its first appearance within the next few weeks. One of the biggest tasks the R.H.E. has had to tackle has been the examination of more than 17,000 applications for original permits.

Overseas Railway Traffics

DURING 1949 a £3,151,145 increase in Canadian National Railways operating revenues was accompanied by a £4,587,230 advance in operating expenses, so that net revenue fell short of the 1948 total by £1,436,085. Operating revenues at £166,907,795 and operating expenses at £159,500,553 brought a net result of £7,407,242 for the year. There was only a slight improvement in C.N.R. gross earnings for December amounting to £83,478, whereas working expenses were up by £392,230; net revenue for the month was £1,758,908, as compared with £2,067,660 last year. Antofagasta (Chili) & Bolivia traffics for the fortnight ended January 22 were higher by £33,480, at £158,650, and on the aggregate are £219,974 for the first three weeks of 1950. During the same fortnight there were advances by G17,594 and G25,089 in Paraguay Central receipts, which totalled G273,804; traffics for the current 29 weeks are G1,111,461 higher, at G4,141,266.

Maintenance Costs on British Railways

ANOTHER year of progress was revealed in the reports presented to the sixty-sixth winter general meeting of the Permanent Way Institution on January 28, at which all Sections in Great Britain, and the Malayan Section, were represented. Over 400 new members were enrolled during 1949; a new Section was founded for members in the Peterborough and Lincolnshire areas; and the Malayan Section was revived. At the dinner after the meeting, Sir Cyril Hurcomb, Chairman, British Transport Commission, praised the work of the permanent way men in helping to maintain the high standard of efficiency on British Railways, and emphasised that during 1948 (the first year of nationalised working) £48 million, or 16 per cent., of the total railway working expenses, had been spent on current maintenance and renewal of permanent way and structures. Savings in manpower and methods had been effected, but further economies were called for, and a lead in this direction had been given by the greater use of mechanical equipment and prefabricated sections of track. The meeting and the dinner are reported elsewhere in this issue.

Safety on British Railways

FURTHER proof of the high standard of safety so long associated with the railways of Great Britain was provided by Sir Cyril Hurcomb at the annual winter dinner of the Permanent Way Institution, when he stated that during 1949, nearly 1,000 million passengers were carried by British Railways without a single fatality in a train accident. To match this enviable record, it is necessary to go back over 40 years, to 1908, when there was no shortage of labour or materials, and maintenance programmes were in no danger of being curtailed or deferred. The record of the past year is all the more praiseworthy in that it was achieved in very different circumstances, and in the face of exceptional difficulties arising from the long-continued shortage of materials, and while a substantial margin of accumulated wartime arrears of maintenance still remains to be overtaken. Moreover, records for the year show that the number of temporary speed restrictions, due to the state of the track, was reduced, and the standard of punctuality showed some improvement.

Improved Anglo-Scottish Connections

IT is good to note that steps are still being taken, during the currency of the winter timetables, to re-establish some of the broken connections to which we called attention in the article on the winter train services in our September 30, 1949, issue. A welcome alteration was made in the Scottish Region on January 2 (but not, unfortunately, included in the January issue of *Bradshaw*), when the 7.10 p.m. train from Carlisle to Edinburgh Waverley was altered to leave at 7.33, and connect with the 1 p.m. from Euston; this restores the service from the South to the Border towns on the Waverley route which disappeared when the midday train from St. Pancras to Glasgow St. Enoch was withdrawn during the fuel crisis. It is to be hoped that it will be possible to carry out the remainder of our suggestion in the summer, and put last year's 5.25 p.m. from Leeds to Carlisle in connection with the 7.33 p.m. and 7.36 p.m. from Carlisle to Edinburgh and Glasgow, thus restoring a service from the Midlands to Scotland without extra mileage.

An Unjustifiable Timetable Practice

A PROTEST, on the other hand, must be made against the growing practice of altering trains to earlier departure times during the currency of a timetable, especially when such alterations are made too late for inclusion in a forthcoming issue of *Bradshaw*. Such a practice was almost unknown in pre-war days, and may cause great inconvenience when a long-distance passenger arrives at a provincial station and is confronted by a chalked notice that "the 5.25 train was altered on November 6 to leave at 5.15," or finds that a train advertised in timetable books to start at 6.45 really leaves at 6.40. It is realised that there are good reasons for all such alterations, and that the monthly slips published by British Railways summarise alterations made since the last timetable issue; but the practice is objectionable and doubly so when, as in case of some recent alterations in the Scottish Region, it affects a train which gives the last service of the day to certain stations.

Window Glazing for Coaching Stock

AS a result of recent experiments several new types of glazing have been evolved which can be applied to railway coaching stock or other types of passenger transport vehicles. Among the advantages claimed for the new system, which is described elsewhere in this issue, are reduced manufacturing and maintenance costs. Due to the considerable pressure which is exerted on the glazing by the insertion of a specially shaped rubber sealing ring, which holds the glass in position, a watertight framing is obtained, and as no cement or adhesive is necessary it is possible to replace a broken glazing by removing the rubber seal, an operation easily carried out. The system also eliminates the use of channels, metal window sections, and pans, and can be adapted for bodies of timber or steel construction having windows with square or rounded corners. The rubber seal can be applied by hand or with a hand-operated gun which lubricates the rubber as it passes through the barrel. Where metal sections are used for glazing, once fixed into position, the sections become integral with the body, and do not need to be removed.

The Bergen-Oslo Railway

THE fortieth anniversary of the opening of the Bergen-Oslo Railway occurred on December 1, 1949. The need for railway communication between the two chief cities of Norway became apparent at an early date, but the construction of a line across the intervening Hardanger Mountains presented such serious engineering difficulties, that the project took many years to mature. A railway from Bergen to Voss, at the foot of the mountain range, was opened in 1883, but it was not until 1894 that the remainder of the route was authorised. For more than 30 miles, the railway runs far above the tree line, and the summit, near Finse, is well over 4,000 ft. above sea level. Heavy snowfalls occur throughout the winter and Spring, and the difficulties of keeping the line open for traffic are exceptional. For many miles the line is protected by snow sheds or screened by snow fences, and rotary snow ploughs are used to clear the most exposed sections. The construction of the railway and the protective works are described elsewhere in this issue.

Railway Maintenance and Government Policy

ON more than one occasion we have referred to the disabilities which will face the railways as a result of carrying out the policy laid down by Sir Stafford Cripps during the debate on the economic situation which took place in the House of Commons on October 26. The Chancellor of the Exchequer, who was outlining the economies which would have to be effected in capital and other expenditure, admitted that capital investment in the transport group was already so restricted that the scope for further curtailment was very limited. Nevertheless, he insisted that some additional contribution would have to be made by transport. He went on to explain that in the case of railways this would "involve some reduction in the standard of maintenance and the restriction of some much-needed new development work."

Notwithstanding the curtailment of maintenance and development works on which he insisted, Sir Stafford Cripps later in his speech went on to make the point that the real and essential task of providing the greater flow of the right goods and selling them in the right markets, to assist in national recovery and the bridging of the dollar gap, would remain a job to be done by the men and women in our industries and in "our great national services, such as those of fuel and power, agriculture and transport." The railways, therefore, have been faced with a dual and, to some extent, contradictory task. They have to reduce expenditure on the rehabilitation of their business, which, through no fault of their own, but because of wartime strains and stresses, and because of the impossibility of securing either labour or material to make good the exceptional wear and tear of those years, has fallen below the long accustomed high standards. At the same time, they have to make the maximum contribution towards the general trade and industry of the country, which can only mean giving the most efficient and economical service possible.

The implementation of the new economy policy could not have come at a more unfortunate time from the viewpoint of the railways. It has coincided with an endeavour, made since the cessation of the war, but only possible of substantial achievement in the last two or three years, to bring back their physical assets and the services they provide to the pre-war standard. It had been hoped that the shortages in rolling stock, the deterioration in civil engineering works and permanent way and a long list of deferred maintenance jobs would have been caught up with over the next two or three years, and that the position would have improved progressively. A number of large-scale new works which had to be laid aside, with the outbreak of war, had also been put in hand again. A number of these will now have to be deferred once more, and the services which the railways otherwise could have provided to that extent will be the poorer.

The Chancellor's pronouncement of policy and its elucidation in such detail as had been available, obviously could not be put into operation immediately. A good deal of work was already in hand at the time Sir Stafford Cripps made his speech. Financial commitments had been made, and a sudden cutting-off of some of the work being done was a practical impossibility. Therefore the full brunt of the economies which the railways must make will not be felt during the current year, but as it appears likely that they will have to make good in 1951 any excessive expenditure which takes place during 1950, a more serious position will arise next year.

In his speech at the annual dinner of the Permanent Way Institution last Saturday, Sir Cyril Hurcomb gave some indication of the figures which are involved. He acknowledged that there was still about a year's deferred maintenance of permanent way to be overtaken: track renewals in the last two years have been at the rate of about 2,000 miles a year, and maintenance and renewals of permanent way are costing just over £30,000,000. Current maintenance and renewals of ways and structures cost £48,000,000, or 16 per cent. of the total of railway working expenses. Another £6,000,000, not charged to current revenue, was spent in overtaking arrears. Some £50,000,000 is spent yearly in ensuring the safety of the permanent way and on keeping bridges, tunnels, signalling equipment and station buildings in reasonable repair.

Because capital investment, in the strict sense of the words, for some years has been relatively so small on the railways, the term as used by the Chancellor of the Exchequer appears to have been interpreted by the Treasury in this connection in a much wider sense. Sir Stafford Cripps, indeed, envisaged that it would in his speech in the House of Commons. From the railway viewpoint it covers repairs to all civil engineering works, including permanent way and the renewal of the latter, the construction of rolling stock and additions and improvements to such items as signalling and telecommunications, electric power equipment and workshop plant and machinery, as well as the total cost of all new works, major renewals and war damage proportions of these works. Both capital and revenue proportions of additions and improvements and of new works fall under the general call for economy.

This aspect of Government policy and its repercussions on railway operations will have to be borne in mind in any considerations affecting railway progress and efficiency during the next year or so. The reaction of curtailments of this kind on the national economy must be important. It is not a matter which the railways themselves can do much to alleviate. Rather it constitutes a matter of high policy which should receive the attention of the British Transport Commission and of the Ministry of Transport. Those two bodies will be responsible ultimately for the efficiency of the railways, and on them must rest the onus of representing to the Cabinet the implications and results of the implementation of the Chancellor's edict.

National Policy and Canadian Railways

GOVERNMENT transport policies have been among the basic factors in influencing the economic development of Canada and in determining the relations of the Dominion with the Provinces. A review of the principal events in Canadian railway history, which formed part of a Paper to the Railways Students' Association on January 25, by Mr. J. B. Thom, European Manager, Canadian National Railways, drew further attention to the part played by Government agencies in Canadian railway development. Geography and natural resources had greatly influenced transport policy, but though economic environment would seem to have warranted a north and south development of traffic, for national reasons the flow of traffic had been directed east and west and made to take place within the political confines of Canada.

Commenting on the present situation where the major portion of Canadian rail transport is conducted by two large systems, Canadian National Railways and the Canadian Pacific Railway, Mr. Thom pointed out that, apart from their rail interests, these companies own, operate, or control, hotels, summer resorts, telegraph companies, express companies, steamship lines, air lines, grain elevator and warehouse companies, as well as being land owners. Canadian National Railways were the largest railway system in North America, though the financial results left a great deal to be desired.

The tremendous value of the system in the over-all national economy was obscured by the somewhat discouraging financial results, primarily due to three factors. In 1923 the newly-organised system was required to take over, without mitigation, the debts of its bankrupt predecessor corporations. This had saddled the C.N.R. with interest charges of $35,600,000, notwithstanding that in the preceding five-year period the constituent railways had failed to earn their operating charges (before interest) by $59,400,000. Further factors were that the system was obliged to operate a considerable mileage of marginal and non-paying lines in the public interest, and railway tariffs of rates and tolls had not kept pace with increased costs.

The Paper was preceded by a coloured sound-film and messages were read to the meeting from Mr. F. Bramley, Secretary, C.P.R., and Mr. M. A. Metcalf, Vice-President & Executive Assistant, C.N.R.

Commercial Train Services—London and Leeds

THESE are now confined to the two routes from Kings Cross and St. Pancras, over the late Great Northern and Midland railways. The old London & North Western service from Euston *via* Stockport and Stalybridge, though it boasted a sleeping-car from Euston to Bradford in 1905-6 and announced through carriages to Bradford during the Second World War, and is still of value to Leeds passengers who may want to break their journeys in West Riding towns, cannot be considered as a London and Leeds business route, and Marylebone to Leeds is no longer in the picture.

In 1903-4, however, when the Great Central began to run a service from Sheffield Victoria to Wakefield and Leeds Central—of which latter station it was a part owner—there was a period when the 3.25 p.m. from Marylebone was worked through *via* Sheffield to Leeds, arriving at 7.36 p.m., and returned from Leeds at 7.40 a.m. to form the 8.50 non-stop from Sheffield to Marylebone, which slipped a carriage at Nottingham and was due in London at 11.50 a.m. The service did not operate long enough to capture London and Leeds traffic. In any case, the Great Northern 3.45 p.m. from Kings Cross then reached Leeds at 7.45, and its 7.50 a.m. up was in Kings Cross at 11.30—(the best Kings Cross and Leeds times at that date were 3 hr. 35 min. down and 3¼ hr. up)—though the Midland route could offer nothing earlier than a 1 p.m. arrival at St. Pancras from Leeds, and its 3 p.m. from London was not due in Leeds till 7.35 p.m.

When the Great Northern and Midland were competing, early in the century, for London and Leeds traffic, the Midland could set against its handicap of at least 10 miles longer distance and the many obstacles of its road north of Trowell, the fact that Leeds was on the direct route of the Midland Scottish expresses. Had the scheme for putting Bradford on the direct route to Carlisle matured (the only result was the opening in 1909 of the Royston Junction and Thornhill line), the West Riding services from London would have been entirely altered, and it would have been a difficult timetable problem to avoid worsening the Leeds expresses, for the Scottish trains would probably have split at Chesterfield, one portion running *via* Eckington and Leeds and the other *via* Sheffield and Bradford, and been combined again at Skipton.

When the Midland service to Scotland was reorganised in 1901, everything was sacrificed to reaching Leeds as quickly as possible, and the day services at 9.30, 11.30 and 1.30 from St. Pancras all took the shortest route, *via* Leicester and Eckington, and so reached Leeds in 3 hr. 53 min., 3 hr. 53 min., and 3 hr. 57 min. The fastest of the night expresses, leaving St. Pancras around 7.15 and 8.30 p.m., did contrive to serve Sheffield (but not Nottingham) and get to Leeds in 3 hr. 57 min. and 3 hr. 52 min. In later years the 8.30, leaving at 8.15 p.m., served Leicester, Nottingham and Sheffield, but was not in Leeds till 12.35 a.m.

Leeds reaped a further advantage from the commencement of the Heysham and Belfast steamer service in September, 1904. The Heysham boat train, in its palmy days, left St. Pancras at 6 p.m. and was in Leeds, *via* Sheffield, at 10.8, and on its up journey left Leeds at 6.35 a.m. and was due in London at 10.40—an ideal early morning commercial service, had it not depended on a boat. The 1901 expresses from Scotland to St. Pancras had an equally good effect on the up services from Leeds, as, apart from a non-stop to London which left Leeds at around 3.40 p.m. in summer, and in 1907 gave a Leeds to St. Pancras timing of 3 hr. 34 min., afternoon trains from Glasgow and Edinburgh left Leeds at 6.22 and 7.18 p.m. and were due in London at 10.20 and 11.15 p.m. The Midland route in those early days had the additional advantages of extremely good third-class accommodation, and a restaurant car service which was admittedly then the best in Great Britain.

To the Great Northern, Leeds Central in those days was, to all practical purposes, a terminus. In 1901, the morning trains at 7.15 and 9.45 a.m. from Kings Cross reached Leeds at 11.15 a.m. and 1.24 p.m.; the 9.45 was the forerunner, till October, 1907, of the more familiar 10.10 or 10.15 departure; and there was a return 4-hr. service from Leeds at 5.30 p.m. There was, however, no up express from Leeds earlier than the 10 a.m., 1.55 p.m. at Kings Cross, and the evening return from London was at 5.45 p.m., 9.35 into Leeds. An up "special express" from Leeds at 2 p.m. gave the best journey-time to Kings Cross in 3 hr. 35 min. with Holbeck, Wakefield, and Grantham stops; subsequently it ran non-stop up from Wakefield, arriving in London at 5.30 and, finally, 5.25—3 hr. 25 min. being the best Great Northern timing till the Pullman days.

A curious little flicker of competition with the Midland occurred in 1910, when the Great Northern ran a new 2.15 p.m. from Kings Cross, non-stop to Doncaster, primarily to deter Bradford and West Riding passengers from using the newly-opened Thornhill line, which reached Leeds at 5.55 p.m. It returned from Leeds at 6.30 p.m., and was due at Kings Cross at 10.5. There had, however, been an older service from Leeds at 6.30 p.m. to counteract the Midland 6.22 and 7.18 p.m. expresses to St. Pancras, which connected at Doncaster with the 2.20 p.m. from Edinburgh Waverley, and was due in London at 10.45 p.m. Similarly, the Great Northern 2 p.m. from Leeds, which was not strictly a commercial service at all, and was a comparatively light train till 1914, offered a good alternative to the Midland 1 p.m. from Leeds, which in its best days was in St. Pancras at 4.45, and to the morning service from Glasgow St. Enoch, which in 1901 was leaving Leeds at 2.15 and due in London at 6.5 p.m., calling only at Trent. The Midland route had no arrival at Leeds from London before 1 p.m., and it is rather strange that the Great Central, among all the changes of policy which marked its main-line services before 1914, never hit on the idea of a fast early morning train from Marylebone, to serve Leicester, Nottingham, and Sheffield on its way to Leeds.

After the grouping, when the Pullman cars which Sir Henry Thornton had introduced on many Great Eastern services were formed into first- and third-class all-Pullman trains from Kings Cross, the London and Leeds time, by Pullman, came down, from July 9, 1923, to 3 hr. 25 min. and, finally, to 3 hr. 11 min., and the up Pullman, when its departure from Leeds became fixed at around 4 p.m., was a very useful return commercial service. Another Pullman, running up from Leeds at around 11.30 a.m. and returning from Kings Cross at 4.45 p.m., appeared in May, 1928; these two Pullmans are running today in very similar form but, of course, at lower speeds; and in the autumn of 1937 the high-speed "West Riding" was introduced, leaving Leeds at 11.31 a.m. (displacing the Pullman, which was then routed from Harrogate to London, *via* York) and reaching Kings Cross at 2.15 p.m. It returned at 7.10 p.m., due in Leeds at 9.53. The "West Riding" then charged a supplement of 4s. and 2s. 6d., first and third class; the extra fares for the Pullman, at lower speed, were 6s. and 3s. respectively.

The 1939 service, tabulated on page 125, was admirable for Leeds business men coming to London for the day, as the 7.50 a.m. was accelerated in May, 1932, to run the 105½ miles from Grantham to Kings Cross in 100 min., and got them to London at 11.20. There was a good ordinary-fare return train at 5.50 p.m., as well as the extra-fare trains at 4.45 and 7.10 p.m.—probably the best one-day return service in the country for business men over a comparable distance. Passengers starting from London could leave at 7.25 a.m. (though unfortunately this train made no stop in the suburban area to serve "commercials" living north of London) or at 10.10 a.m., if a full afternoon in Leeds met their requirements, and there were return trains at 3.55 and 5.30 p.m. The Midland route at this date, though still maintaining a competitive service, was losing its hold on the London and Leeds traffic, in spite of the accelerations of 1937. There was no service from St. Pancras reaching Leeds before the afternoon, and one up train at 5.16 p.m. replaced pre-war departures at 4.4, 6.22, and 7.18, as the third day service between St. Pancras and Glasgow was never restored after

the first world war, and the 5.16 was losing custom through its unpunctuality. The up Midland morning service from Leeds compared badly with the London & North Eastern 7.50 and 10.10 a.m., and, although the 6.20 p.m. from St. Pancras was useful for return passengers who might miss the 5.50 from Kings Cross, both the 5.0 and 6.20 p.m. Midland Division trains were completely eclipsed by the extra-fare trains over the London & North Eastern at 4.45 and 7.10 p.m.

The loss of an early morning departure from Kings Cross for Leeds is the weak point of the Eastern Region 1949 service. The 1.17 p.m. arrival at Leeds of the 9.20 a.m. is of little more value than the 2 p.m. arrival of the pre-war 10.10, to which the 9.20 "White Rose" now acts as a relief. Even at today's speeds, it should be quite possible to give a Leeds arrival from Kings Cross well before noon, by a later version of the pre-war 7.25, and with a stop in the London outer suburban area to lessen the inconvenience of an early start, and such a train, if it gave a connection from Retford to Sheffield, might also fill a serious gap in the present service to the Sheffield area.

Thanks to the Pullman, return trains from Leeds are fairly satisfactory, but the up "White Rose" at 5.15 p.m. is comparatively slow, and as there is no evening up express on the old Midland route, a fast evening train from Leeds is the obvious balance for a new morning train from London. Business men coming up to London for the day from Leeds are more fortunate, for the 7.50 a.m. "West Riding" (now, of course, without supplementary fare) is in London before noon, and the 8.30 a.m. departure (included in the timetable because, though really a York and Hull service from Doncaster, it has advantages over the 9.50) gives a full afternoon in London. The 3.45, 5.30, and 6.5 p.m. return trains from Kings Cross meet all requirements, and it is significant that the Pullman, with supplements of 8s. and 4s. first and third class, is only 4 min. faster to Leeds than the post-war version of the "West Riding."

LONDON AND LEEDS

1939

			P					P		
	a.m.		a.m.	a.m.	p.m.		p.m.	p.m.	p.m.	p.m.
Kings Cross dep.	7.25	—	10.10	11.20	1.30	—	4. 0	4.45	5.50	7.10
Leeds ... arr.	11.15	—	2. 0	2.31	5.14	—	7.56	8.13	9.43	9.53
		a.m.	a.m.	noon		p.m.	p.m.	p.m.	p.m.	
St. Pancras dep.	—	9. 5	10. 0	12. 0	—	2.10	3.25	5. 0	6.20	—
Leeds ... arr.	—	1. 5	1.48	3.55	—	6.21	7.41	9.21	10.24	—

1949

			P					P		
	a.m.	a.m.	a.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	
Kings Cross dep.	—	9.20	10.15	11.30	1. 0	1.30	3.45	5.30	6. 5	—
Leeds ... arr.	—	1.17	2.51	3.12	5. 8	6. 5	7.37	9.18	10.44	—
	a.m.	p.m.	a.m.			p.m.	p.m.	p.m.		
St. Pancras dep.	—	8.50	9.40	11.45	—	2. 0	3.12	4.50	—	—
Leeds ... arr.	—	1.49	2.21	4.34	—	7. 1	8.12	10.10	—	—

P Extra-fare train

LEEDS AND LONDON

1939

			P					P		
	a.m.		a.m.	a.m.		p.m.		p.m.	p.m.	p.m.
Leeds ... dep.	7.50	—	10.10	11.31	—	1.10	—	3.10	3.55	5.30
Kings Cross arr.	11.20	—	1.47	2.15	—	5. 5	—	6.55	7. 5	9.25
	a.m.		a.m.		a.m.	p.m.	p.m.	p.m.		p.m.
Leeds ... dep.	8. 0	—	9.47	—	11.7	12.50	2.28	3.13	—	5.16
St. Pancras arr.	12. 0	—	1.36	—	3.32	4.47	6.30	7.20	—	9.10

1949

				P					P	
	a.m.	a.m.	a.m.	a.m.	a.m.	p.m.		p.m.	p.m.	p.m.
Leeds ... dep.	7.50	8.30	9.50	10.40	11.20	12.45	—	3.15	4.25	5.15
Kings Cross arr.	11.51	1.10	2. 0	2.33	4. 5	5.25	—	7.55	8.10	9.50
	a.m.		a.m.		a.m.	p.m.	p.m.	p.m.		p.m.
Leeds ... dep.	7.43	—	9.43	—	10.54	12.38	2.36	3.43	—	5.20
St. Pancras arr.	12.40	—	2.30	—	4. 0	6. 5	7.30	9.20	—	10.50

P Extra-fare train

The 1949 service over the old Midland route offers so little inducement to London and Leeds passengers that a heavy extra burden has been placed on the Kings Cross trains. Leicester and Nottingham, which depended on the Midland for their communication with Leeds since the withdrawal of the old Great Central Sheffield and Leeds service, are at a serious disadvantage, and there appears to be a strong case for a joint overhaul of the Yorkshire trains from St. Pancras and Marylebone, with Bradford (*via* Huddersfield and Halifax) rather than Manchester as the goal of the latter. There are many reasons, of course, for the worsening of services on the London-Midland route—the condition of the road north of Troweil, the fact that there is now only one "day" train between St. Pancras and Glasgow, and the transfer of the Heysham boat trains to the Euston route, all have their bearing on the St. Pancras and Leeds times; but the average journey-time by Midland between London and Leeds has risen by 53 min. down and 69 min. up in 1949 compared with 1939, although the Eastern Region average increase, in spite of the loss of high-speed trains, is only 36 and 49 minutes. After the up "day" train from Edinburgh to St. Pancras, which now leaves Leeds at 3.43 p.m. and takes over 5½ hr. to London, the only Midland service is by the 5.20 p.m. Bristol train to Derby, and forward on the 5.50 p.m. from Manchester (a 5½-hr. journey, with one change and no restaurant car) and 4.50 p.m. is now the last departure for Leeds from St. Pancras.

The abandonment of the direct route to the North *via* Eckington, and the routing of all expresses *via* Sheffield, is a reasonable change to which no objection can be raised, but none the less it seems deplorable that the Midland, with its great traditions and reputation for passenger service and punctuality, should have dropped to its present position. It should be mentioned that, as in the case of Euston and Birmingham trains, Midland arrivals at St. Pancras appear a little worse than they really are by the practice of advertising times to the public as much as 8 min. later than the actual working arrivals, but this, we understand, may soon be remedied.

Testing a Pre-Stressed Concrete Girder

THE subject of pre-stressed concrete structures is attracting a good deal of attention at the present time, and a test carried out recently at Philadelphia, U.S.A., aroused more than local interest. The girder tested was similar in design to the 13 girders to be used in the main span of Walnut Lane Bridge at Philadelphia. It was 160 ft. in length, 6 ft. 7in. deep, with a web 7 in. thick, and top and bottom flanges 4 ft. 3in. and 2 ft. 6 in. wide, respectively. Moreover, it contained 80 cu. yd. of concrete and 256 high-tensile steel wires, each 0·276 in. in dia.; its weight was 150 tons. The wires were in four groups, each forming a cable in a rubber-core housing running the length of the girder. Two of the cables ran straight through the bottom flange, and the other two followed parabolic curves in the web. The wires were stressed to 125,000 lb. (56 tons) per sq. in., two wires being stressed at a time with 10-ton jacks. The total stress imparted to the four cables was 955 tons, which stretched them 9 in.

The intention was to test the girder to destruction, and for this purpose steel ingots, aggregating 400 tons in weight, were provided; actually, they proved to be insufficient. The girder was fitted with 23 strain gauges in crucial positions, and loading was applied at eight points. The first load added to the 150-ton deadweight of the girder was 55 tons, representing the estimated working line load of 35 tons (750 lb. per ft.) *plus* 20 tons of decking. Under this total load of 205 tons the deflection was ¼ in. The next loading increment was double the working load, producing a deflection of 1½ in The first visible crack appeared after 22 more tons were added, or under a 262-ton load, when the deflection was 2⅞ in.

Loading was continued in increments of 20 tons and gave the following results: under a total load of 384 tons the deflection was 5⅛ in.; under 480 tons it became 10¾ in.; and under 528 tons it rose to 15½ in. As it was then obvious that the loading available would not cause destruction, the test was stopped; by then, however, extensive cracking, indicating failure, had occurred. It is of interest to note that after about half of the ultimate load had been applied, the girder was temporarily relieved of all load to show that, as a result of pre-stressing, all the numerous cracks that had appeared under the load would close up again when it was removed.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Statistics as a Measure of Efficiency

January 18

SIR,—Will you let me add to the letter in your December 16 issue a note on the American way of using statistics? The U.S.A. railways look on "net ton-miles per train locomotive-hour" as a sound gauge of work done, because the figure combines loading and speed factors. Over the last 20 years, this index has risen by 81 per cent., from 10,580 in 1929 to a peak of 19,153 in 1949. In the first week of January, the Association of American Railroads sent out word of this feat. Last year, it added, the average train load of 1,149 tons was 27 tons below the record load hauled in 1948, but was moved faster, owing largely to improvements in rolling stock during the past two years. Motive power was strengthened by putting into service 3,212 diesel-electric and 146 steam locomotives of modern design, while 200,000 new wagons went into traffic and about 150,000 old crocks were withdrawn.

These crisp statistics, ready in the first week of January, made a useful item of news, and may inspire railway operators in the States to aim at working 20,000 "net ton-miles per train locomotive-hour" by 1953 at latest.

Yours faithfully,

R. BELL

Frognal, London, N.W.

1948 Locomotive Exchanges

January 21

SIR,—I have been reading the various communications on the above subject, first from Mr. A. J. Maxwell in your November 11 issue, followed by communications from Mr. S. Ellingworth, Mr. H. W. Franklin, and, lastly, from Mr. R. H. Thomas. As a retired Chief Mechanical Engineer, I am naturally hardly *au fait* with the details of the trials made with the locomotives of the various Regions of the British Railways, but I must confess that in reading Mr. Maxwell's letter I rather sense an element of bias in favour of the former G.W.R. locomotives. In fact I go further in saying that I consider some of the remarks expressed by Mr. Maxwell are a little uncharitable.

I have for years watched the performance of the various classes of locomotives of the former G.W.R., and there is no denying the fact that they are exceedingly well-designed locomotives and have put up some very creditable performances. I consider that they have one very advantageous feature in their favour, the use of Welsh coal, and I believe that in tests made in the past on railway systems other than their own these engines, using ordinary hard steam coal, did not show up too favourably, attributed chiefly, I think, to their relatively small firebox and limited grate area, a feature that does not exist on the former L.M.S.R. and L.N.E.R. engines.

I must confess I know very little about the "Merchant Navy" or "West Country" engines, but providing that they have adequate adhesion on the coupled wheels, there should not be undue slipping, and I cannot for a moment believe that Mr. Bulleid overlooked that fundamental necessity. I do not propose to discuss Mr. Ellingworth's or Mr. Franklin's communications, as they are more or less couched in the same condemnatory terms, and while I agree generally with what Mr. R. H. Thomas has to say, I will refrain from discussing it, emanating as it does from the birthplace of the locomotives in question.

I consider that during his regime as Chief Mechanical Engineer of the Southern Railway Mr. Bulleid has demonstrated a remarkable amount of versatility and courage in the various designs of both steam and electric locomotives and types of rolling stock. In steam locomotives he has incorporated all-steel welded fireboxes, and, I rather think, welded boiler shells, thermic syphons, and steam-operated firedoors, all valuable attributes towards an efficient boiler. This gear-driven valve motion, totally enclosed, running in an oil-bath, is a distinctly novel break-away from the conventional.

I cannot discuss the Leader-type locomotive, as I am not cognisant of the features of its design. Then, again, there is the double-deck suburban train, designed in an effort to surmount the difficulty of congested suburban traffic. In conclusion, my view is that the engineer who has the courage to break away from the conventional is to be admired, and personally I regret Mr. Bulleid's departure from the Southern Region before his various schemes had reached fruition.

Finally, let me close with the old proverb that the man who does not risk a failure never achieves anything.

Yours faithfully,

ROBT. H. WHITELEGG

The Court, Maidenhead

Travel in England

January 10

SIR,—With the conclusions reached in your December 30 issue by Mr. Roger Sewill, following his "remarkable journey on the 'South Yorkshireman'," that officialdom could not care less what happens to trains and their passengers nowadays, I wholeheartedly, albeit sorrowfully, concur.

For some time now I have had but a nodding acquaintance with main-line travel, but by way of grim compensation I am compelled daily to fritter away two purgatorial hours on the District and Northern Line trains of the London Transport Executive.

The tempo of at least 50 per cent. of my journeys may be described in musical parlance as "adagio e molto maestoso"; whether this is due to some mechanical trouble, a signal failure or just common or garden disorganisation I cannot say, but the frequency of the occurrence is equalled only by the persistent reluctance to take any remedial measures. Worse than this, however, is the superb display of inaction when traffic becomes completely halted.

Not long ago, a Northern Line train achieved a state of inertia between Belsize Park and Hampstead. To say that railway officials fell over themselves in their anxiety to direct and advise stranded wayfarers would, I fear, be a travesty of the facts. By way of illustrating the entire lack of hierarchical interest, when, after a 15-min. search I discovered a bus going more or less in the direction I was seeking, the conductor of this vehicle objected volubly to my claiming a free ride with my railway "season," and demanded payment of the fare on the grounds that he had had no official notification of the mishap. I took the law into my own hands and overruled his objection.

On another, more recent, occasion, there was a notice at Edgware warning passengers of a restricted service between Camden Town and Kennington. Alighting from a train which terminated at Golders Green, I asked the only operative in sight on the platform whether in the circumstances it would be better if I journeyed to Putney *via* Kings Cross, the Piccadilly Line and Earls Court. The answer I received, very roughly transcribed, was to the effect that 'e 'adn't 'eard of no restricted service!

On the District they have at least two unpleasant habits. One of these consists of terminating at Parsons Green a train which not only bears the image and superscription of "Wimbledon," but has been stridently announced and described as proceeding thither at all intermediate points. These tactics are usually adopted in the late evening, with the result that through passengers, already cold and famished, have the added delight of a wearisome wait at this bleak and inhospitable outpost.

The other, in which Parsons Green also plays the leading role, consists of a last-minute decision to detach the rear vehicles from a Wimbledon train, the same unceremonious

treatment being meted out to occupants whose homes are further west.

Surely it would be possible for "Control" (whose office, I believe, is situated at Earls Court) to decide on those alterations in working at least five min. before the respective trains reached Parsons Green, and, once a decision had been reached, to have the requisite information broadcast by loudspeaker at Earls Court itself?

It is in matters calling for close liaison between operating staff and travelling public, such as those I have quoted, that the railway companies in the U.S.A. would seem to be a long way ahead of us, at any rate judging from the excellent article you published about a year ago on the enterprise shown by the Pennsylvania Railroad in this connection.

If the efforts feverishly concentrated on such trivia as tavern-cars, "pretty-pretty" colour schemes, and expensive publicity stunts were diverted to operating train services with greater efficiency, and to showing more consideration to the client when things happened to go amiss, the glory which has departed from our railways might one day return. If the present attitude of *laissez faire* and *sauve qui peut* is allowed to persist, it never will.

Yours faithfully,

J. E. L. SKELTON

9, Keble House, Manor Fields, London, S.W.15

Wagon Turn-Round

December 20, 1949

SIR,—Your correspondent, "Traffic Apprentice," writing in your December 16 issue, is rather young to embark on a controversy in your columns without having, apparently, consulted his stationmaster, or other properly experienced traffic officer, who, to my knowledge, have been asking for larger wagons for upwards of 50 years. Unfortunately, they have always been repelled by old directors, accountants, and other head-office people without practical experience in operating the lines and their traffics.

He follows in their footsteps by claiming that the vast majority of collieries and works are quite incapable of using 40-, 50-, and 60-ton wagons (the measurements of which come within the limitations of our standard gauges), without spending large sums in adaptation. Instead of making these vague statements, could they not provide us with concrete instances for a change, when their assertions could then easily be put to the test? Perhaps they might also tell us how 80-ton locomotives actually run about all such sidings.

Obviously, none of them knows that private sidings and their accessories are legally obliged to conform to the standard gauges of our railways, and that they are not allowed to connect with them until these conditions have been complied with. I have known the opening of new private sidings to traffic operation having to be postponed for a day or two because authorisation had not been received from the railway engineer.

Naturally, a railway will not risk its locomotives and wagons being derailed and damaged until it is satisfied that the private siding is in proper condition. Nor would an industrial concern incur the heavy expense of constructing sidings and, afterwards, erect structures alongside or overhead which prevented standard gauge locomotives and wagons from operating in them. It would soon have the railway foreman, ganger, stationmaster, or engineer on its track! I have been well acquainted with conditions at dozens of collieries and works.

Does "Traffic Apprentice" think that because a small coal merchant cannot deal with more than a 10-ton wagon a day, all other traders, works and factories—dealing with up to hundreds of tons of coal and other traffics daily—should be denied the use of 40-, 50-, and 60-ton self-discharging, ordinary open and covered wagons, and the much cheaper transport they would secure from them? Even coal merchants in little country towns who have to supply all the inhabitants and farmers and others for miles around, are quite capable of accepting a 60-ton self-discharger once a week, instead of a 10-ton wagon a day.

I am quite sure that district officers and stationmasters need no reminder from me that hundreds, or thousands, of wagons stand for days, or weeks, congesting sidings all over the country. Evidently, he does not know that London coal merchants have often complained that, on the average, it takes 14 to 17 days to bring wagons from the Midlands to London. Where does he think they have been? For a similar short haul in other countries, they would be in the unloading siding the morning after despatch from the collieries.

So instead of inventing, or repeating, age-old specious theories, "Traffic Apprentice," and other head-office people, would do more useful work in helping to eliminate the horrible congestion on our railways created by the present swarms of toy wagons and toy trains. But because British railwaymen, from top to bottom, have never known anything better, they cannot appreciate it.

Mr. D. H. Sheward, in your January 6 issue, also thinks in terms of small coal merchants only. Neither of them considers the thousands of works and factories which consume up to 1,000 tons of coal a day, or week. Nor the ordinary householders. In earlier days, they paid only 16s. or 18s. a ton for coal. The merchant now charges them as much for his own services only! Rail and distribution charges then added under 25 per cent. each to the pithead price. They now double the pithead price, and the unfortunate working man is compelled to pay around 90s. a ton, plus heavy increases in gas, electricity, iron and steel goods, and everything else.

Not the smallest attempt has been made to reduce these overhead charges on coal, by modernising methods. Self-discharging wagons of 20, 40, and 60 tons capacity should drop their loads into bins, holding 50-100 tons each, alongside railway embankments, for each class of coal. Under these, road vehicles and bags would be filled in a couple of minutes—instead of there being a delay of an hour, or more, waiting for unloading by hand and shovel. Lorries would make three or four trips where they now make one. Rail wagons would also get a very quick turn-round, and transport, unloading and road haulage costs would be substantially reduced. Such methods (with 10-ton self-dischargers) are used at some places; they should now be generally adopted. The bins can easily and quickly be made with the bodies of outworn coal wagons—double or treble width and height.

Although the minds of Mr. Sheward and "Traffic Apprentice" may reel at these improvements, let them console themselves with the reflection that there are plenty of other people in England ready to swoon at the bare idea of being wafted from the methods of the middle of last century, into the methods of the middle of this century.

Yours faithfully,

E. R. B. ROBERTS

Eynesbury, St. Neots

Limitation of Railway Speeds

January 12

SIR,—In his letter under the heading "The Flying Scotsman" in your January 6 issue, Mr. G. F. Thomlinson made a remark about "the technical limit to the speed of movement on rails" which sounds as if he had some misgivings as to the possibilities of railway travel. In fact, we are nearer these limits than sometimes assumed as far as short-distance travel between industrial cities is concerned. This could be deduced from a recent article in *Eisenbahntechnik* by K. Leibbrand.

In a distance of 120 miles, by increasing the speed from about 60 m.p.h. to 100 m.p.h. we can save 48 min., but we need about double the power. By increasing the speed from 100 m.p.h. to 150 m.p.h., we can save only just another 24 min., and have again to double the power and require special track with curves smoothed out, and so on.

We can safely assume that for shorter journeys not much more than 100 m.p.h. will become the highest travel speed, *i.e.*, double the speed of that of road traffic with its speed limited by physiological, not technical reasons.

Yours faithfully,

W. JACOBSOHN

76, Elgin Crescent, London, W.11

THE SCRAP HEAP

L.M.R. Coal Traffic

In 1949, British Railways, London Midland Region, hauled 58,000,000 tons of coal, 3,500,000 of which was for export. This represents a million tons more than in 1948.

Scarecrow on Signal

A twelve-year-old boy, charged at Berkhampstead on January 18 with trespassing on British Railways property, was said to have been found at the top of a 60-ft. signal standard with the signal at danger. He was carrying a scarecrow, which, he said, he was going to put at the top of the standard. Three days earlier he had put a bucket on top of a signal.—*From the "Evening Standard."*

Teething Troubles

We have received from Mr. Robert F. Legget, Ottawa, a cutting from a Canadian newspaper, referring to an engine driver who lost his false teeth when taking a train from Owen Sound to London, Ontario, and was mentioned briefly in our November 25, 1949, issue, Scrap Heap page. The cutting reads as follows:—

The Owen Sound-London passenger train ground to a halt in the midst of nowhere. Startled passengers rushed out to see what was wrong. Engineer Bailiff gave it to them straight. Gazing intently back over the unending miles of track, he said: "I lost my uppers when I sneezed."

The train backed up to the approximate point of the sneeze. Passengers and train-crew alike joined in the search. Passenger H. R. Ford, of Owen Sound, pounced on an object lying on the roadbed. The teeth!

Engineer Bailiff washed off some bits of grass and cinders and slipped them back in his mouth. Two toots of the whistle and the train was away to complete the last half of its 110-mile Southwestern Ontario run to London.

Judge's Moving Story

Mr. Marven Everett, counsel in a case at Cambridgeshire Assizes, asked Mr. Justice Stable: "Has your Lordship never had the experience of stepping off a railway train, or particularly an underground train, especially on the Inner Circle, where very often the train is just rolling along?"

The Judge replied: "I am afraid I habitually get on and off buses and trains when they are moving. I will make you a gift of that admission if I break my neck."—*From "The Evening News."*

"Welcome to Paris" Office

New Paris information and reception office staffed by uniformed "hostesses" and primarily for English-speaking visitors which has been opened under the auspices of the French Tourist Board at the Gare St. Lazare, Paris

Ripe for Exploitation

As a direct result of suburbanites' fury, the New York Grand Central Terminal—the huge railway station that handles half of the city's daily traffic—at midnight on January 2 switched-off 41 loudspeakers through which for 13 weeks canned music and advertising slogans had been blasting them as they waited for their trains.

The noise was bad enough; but what really angered these 250,000 people was the discovery that to the advertising profession behind this experiment they were described as "a captive audience" ripe for exploitation. Commercial advertisers queued up when the railway company put this "captive audience" at their mercy 17 unbroken hr. a day—with time for 240 sales slogans in between music that pursued the traveller to every cranny of the station.

The company collected more than £8,000 from the three months' try-out and felt it was on a good good thing. The only factor it overlooked was the human beings who were the victims of the deal . . . Petitions were presented. People announced they were boycotting every product advertised. The company threw in the towel.—*Mr. Stanley Burch in the "News Chronicle."*

Railway Boxing Championships

The Railway Executive has received 337 entries for the British Railways amateur boxing championships. Qualifying rounds at each of the eight recognised weights are now being fought in the Regions in preparation for the national quarter-finals at York on March 1 and the semi-finals and finals at the Royal Albert Hall on March 15.

The number of entries from each Region and the places at which the preliminary bouts are taking place are: Eastern, 55, Doncaster; London Midland, 113, Manchester and Crewe; North Eastern, 35, York; Scottish, 33, Glasgow; Southern, 58, Clapham; Western, 43, Bristol.

A Carman's Farewell to his Steed

(*British Railways has ordered electrically-driven mechanical horses*)

Goodbye, old hoss! Farewell, my faithful gee!
Constant companion of my weal and woe,
The chilly hand of progress falls on thee
And robots, deaf to "get-up-there!" or "whoa!"
Must take thine honoured place henceforth; alas
That such-like separations come to pass!

I knew thee as the liveliest of colts,
But now—who wants a set of curry-combs?
What good are they to creatures crammed with volts
And fortified by snacks of amps and ohms?
Even the flies will find their sport gone stale,
Plaguing a horse with neither hide nor tail.

Friend after friend has gone upon his way;
(It's no use whickering like that, old son!)
The fact is, we have had our little day,
Our span of usefulness is all but run;
Nothing avails us, Dobbin, but to go—
Our governors won't take a neigh for "no"!

So, as we nibble bread and cheese, or grass,
In our respective havens, we can smile
And wish them luck, and, as the long days pass,
Put back the clock, sometimes, a little while
And think of traffic jams in London Town
And trust their batteries won't let them down!

A. B.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

TASMANIA

State Transport Commission

The newly constituted Transport Commission held its first meeting at Hobart on January 10, 1950. As a result of the Transport Bill passed by both Houses of Parliament towards the end of last year, the Commission now comprises the Acting Commissioner (Mr. M. S. Wilson), the General Manager of Railways (Mr. C. E. Baird), and the Administrator of Road Transport (Mr. A. W. Newton). Mr. Wilson stated that the Commission would endeavour to continue the work of transport co-ordination, which had begun in 1939, and hoped that the Administration would now be able to proceed so as to achieve the utmost efficiency in transport services for the people at the lowest possible cost to the State.

Transport of Coal

The Minister of Mines, Mr. Reece, recently stated in the House of Assembly that the consumption of Tasmanian coal would be almost doubled by 1954, and that the State possessed substantial coal reserves. Demands for railway and industrial purposes were increasing.

The Chairman of the Cornwall Coal Company, Mr. Ritchie, announced at the annual meeting on December 20 that the output from all the company's collieries for 1949 was a record, and that the directors were confident that, provided power and railway transport kept pace with the development programme, output would maintain its upward trend and be sufficient to satisfy extra demands.

SOUTH AFRICA

Rolling Stock

Wagon requirements by loaders are now being met in full, with the large number of new vehicles placed in service during 1949, and all restrictions on the loading of bogie wagons with general merchandise have been lifted. To the end of November last, 7,091 new wagons, mostly bogies, four electric units, and 104 steam locomotives had been placed in service.

Weekly wagon loadings increased from last year's record of 97,184 to 102,493 in the second week of September, 1949. The daily record loading moved up to 18,823 on November 9, exceeding last year's highest daily figure by 1,692 wagons. Average daily wagon loadings in the first five months of the current financial year exceeded last year's average by 1,000.

With ample wagons available, the export of ores and minerals increased. From January to June, 1949, 331,491 tons of manganese ore were hauled to the ports for export; this was 137,998 tons more than in the corresponding period of last year. In the same period, 216,381 tons of chrome ore, 34,997 tons more than in last year, were conveyed for export. Citrus fruit exports totalled more than 4,000,000 cases or 492,905 more than last year.

Financial Situation

The operating results of the railways and associated services for September, 1949, resulted in a deficit of £577,957. Revenue for the month totalled £7,758,947 and expenditure £8,336,904. The railways earned £7,179,761, but returned a deficit on working of £389,121. Harbours, with a revenue figure of £381,965, showed a small surplus of £72,688. Steamships, airways, and aerodromes all showed an excess of expenditure over revenue, the biggest loser being airways with a deficit of £132,311. The net deficit for the month was £498,969, which, with net revenue appropriations amounting to £78,988 added, gives the total losses mentioned above.

Revenue has improved since railway charges were increased on April 1, 1949, but was not able to offset increased expenditure. Weekly earnings passed the £1½ million mark for the first time in the week ended May 7, and reached £1,578,124 in the week ended December 3. Goods earnings, excluding coal, exceeded £1,000,000 for the first time in the week ended July 23, and moved steadily upward to reach £1,005,799 in the week ended August 13, and £1,040,252 in the week after.

EAST AFRICA

New Buses

Two 30-seater third class passenger buses are on order from Albion Motors Limited, Glasgow, for the Uganda road services of the East African Railways & Harbours. The buses have six-cylinder petrol engines with a capacity of 29·4 h.p. A feature of the body design is the large luggage rack on the roof, the rails of which are 2 ft. 6 in. high, an essential requirement for African passengers who carry much bulky luggage.

ARGENTINA

Ministry of Transport Department

The Ministry of Transport has established a new department for selling direct to the public all surplus material originating on the railways or other sections of the Ministry.

New Safety Device

The General San Martin Railway is experimenting with a new safety device utilising photo-electric cells which will lock the points leading to any occupied track.

New Railway School

The Ministry of Transport is calling for tenders for the erection of a railway technical school at Mercedes in the Province of San Luis. A similar technical school is already in existence in Mendoza.

Increase in Buenos Aires Fares

On January 1, the uniform fare of 10 centavos on the Buenos Aires underground railways system was raised to 20 centavos.

SPAIN

Locomotive Exports

Despite shortages of fuel and electric power, which were causes contributing to the recent order placed by the National Railways for 25 steam locomotives in Great Britain, Spanish locomotive builders have had to construct for export. The most recent deliveries have been six large 4-8-0 two-cylinder superheated steam loco-

Thirty-seat bus for East African Railways road services in Uganda

motives for the Portuguese Railways. They weigh 83 *tonnes* without tender, have 1·6-metre (63-in.) coupled wheels, and a tractive effort of 13,350 kg. (29,800 lb.) up to 10 or 12 m.p.h. They incorporate a parallel boiler with a round-top wide firebox spread out over the trailing coupled wheels, top feed, and electric lighting. Two of these locomotives were built by La Maquinista Terrestre, two by the Spanish Babcock & Wilcox company, and the remaining two by the Construcciones Davis S.A.

FRANCE

Locomotive Trials

A special return trip between Paris and Lille was made recently with one of the new 4-6-4 four-cylinder compound stoker-fired locomotives (No. 232.U.1) of the Northern Region, with a passenger train weighing 600 tons behind the tender. The 123½ miles from Paris Nord to the stop at Arras were covered in 105 min. without speed exceeding the usual maximum of 120 km.h. (74·6 m.p.h.). On the return journey 73 m.p.h. was maintained up Chantilly bank, and the output here was about 2,550 d.b.h.p., corresponding to nearly 4,000 cylinder h.p. This locomotive weighs 129 *tonnes* without tender, has an adhesion weight of 69 *tonnes*, and is fitted with Kylchap exhaust.

JUGOSLAVIA

New Railway in Serbia

Preliminary work has been begun on a standard-gauge line, 13 miles long, to connect Rashka on the western main line in Serbia, with Novi Pazar to the south west, in the Ljudska Valley.

Rashka is situated on the line branching at Lapovo, 68 miles south east of Belgrade, from the Belgrade-Nish main line, and leading *via* Rankovicevo (formerly Kraljevo) and Kosovo Polje southwards to join the Nish-Salonika line at Skoplje. The town stands at the confluence of the Ljudska and Ibar rivers, and is 95 miles south-west of Lapovo.

The Rashka-Novi Pazar branch will have one major bridge, over the River Ibar, and will skirt the right bank of the Ljudska River. Novi Pazar, a town of some 15,000 inhabitants, at an altitude of 1,770 ft., is an important if comparatively isolated trading centre on an important route connecting Serbia with Montenegro. Before the war, there was a scheme to build a standard-gauge railway connecting Rashka, thus Serbia, direct with Kotor on the Adriatic shore, passing *via* Kolasin, Podgorica (now Titograd), and Cetinje, then the capital of Montenegro. The Rashka-Novi Pazar branch will be built in accordance with the plans evolved before the war. It will be found on the Jugoslav railway map published in *The Railway Gazette* for September 8, 1944.

GERMANY

Special Compartments in Expresses

If the necessary credits are forthcoming, typewriter compartments enabling businessmen to undertake urgent correspondence *en route*, hairdressers' compartments, and nursery compartments are to be a feature on expresses in Western Germany as from May 14 next.

Winter Sports Train

A "Snow Express" was placed in service between Cologne and the skiing regions in the Black Forest on December 30. The train, intended exclusively for winter sports enthusiasts, operates only if snow conditions in the Black Forest are suitable. It leaves Cologne every Friday at 8 p.m. The route is *via* Mainz, Frankfurt, and Karlsruhe; thence *via* Freiburg-im-Breisgau as far as the Höllental Valley. The ordinary single fare covers the round trip.

Exhibition Train

An exhibition train (*Messezug*) organised by industrial firms wishing to show their products in all parts of the west has been touring Württemberg and Baden since mid-November. The train is to tour the west and north-west during the first quarter of this year and afterwards it may be sent abroad.

Federal Railways Locomotive Order

The first important locomotive order placed by the Federal Railways with the Henschel Locomotive Works at Kassel since the end of the war is for ten tank locomotives and 15 tender locomotives. The order was secured early in January.

New Sleeping and Restaurant Cars

The first units of the new-type Mitropa sleeping cars, with 20 single-berth compartments each, are to be put into service by the end of June. In the middle of May, when the summer timetable becomes effective, various new restaurant car services are to be introduced, including the long-distance services Frankfurt-Lindau; Munich-Münster; Munich-Würzburg; and Cologne-Bebra.

Special Trains Programme

To encourage collective travelling by railway and combat road competition the Federal Railways are evolving a comprehensive programme of special trains covering the whole of Germany. Passengers in groups using these trains will have special facilities, including a 50 per cent. rebate on fares. Tours to Austria and Switzerland for which individual passports will be dispensed with, are also envisaged. The participants will travel with collective passports, thus benefiting from much lower visa fees.

Publications Received

Welding Dictionary: French-German-Spanish-English. London: Iliffe & Sons Limited, Dorset House, Stamford Street, S.E.1. 7½ in. × 5 in. 107 pp. Price 21s. net.—The increased use of welding as applied to the engineering industry has given rise to a considerable number of new words and phrases which have specialised meanings and render difficult the reading of foreign technical literature. This book should help the welding engineer to understand foreign technical papers more easily.

Thoroughbreds of the Rail. Tunbridge Wells, Kent: Photochrom Co. Ltd., Graphic Studios. Set of twelve cards, price 3s.—A set of twelve colour postcards of representative trains and locomotives in British Railways livery, from original sketches by R. Ward, has been produced by the firm of Photocrom Co. Ltd. in conjunction with British Railways. Although the drawings may appear rather crude to the expert seeking perfection in colour and technical detail, they will be welcome additions to the albums of the many enthusiasts interested in the collection of railway postcards.

Welded Track. Published by the Department of Railways, New South Wales, Way & Works Branch, 1949. 40 pp. text and diagrams and 14 plates. 5½ in. × 8½ in.—In a foreword to this brochure Mr. A. C. Fewtrell, Chief Civil Engineer, Government Railways, New South Wales, explains that it has been compiled as a result of 18 years of experience in the use and behaviour of long lengths of welded track. In his opinion no trouble should be experienced with such permanent way providing care is taken to carry out the construction and maintenance instructions given. He considers that these assure a satisfactory and easily-maintained road. Among the features of the brochure are descriptions of thermit and flash-butt welding, the corrosion of welded rails, and methods used in laying them. Among the limits for the maintenance of this track are those dealing with rail creep and anchorage, temperatures during laying, and the behaviour of welded track. Instructions for laying and maintaining are given in considerable detail. Rail-buckling also is examined in detail with a comprehensive rail-gap chart. Excellent diagrams of anchorage, a gap-gauge, and ballast sections follow. Several of the plates show welded track being laid on the spiral of the Bethungra deviation, described in *The Railway Gazette* of January 14, 1949, while others depict pulling-back jacks, methods of handling, railing, welding, grinding, and moving welded rails.

Repair of an Important Bridge over the River Main

Salvage of much of the original structure enabling speedy reconstruction to be carried out

THE repair of the bridge carrying the double-track main line from the Ruhr to Southern Germany across the River Main at Hochheim is described in the December, 1949, issue of our contemporary, *Der Eisenbahnbau*, to which we are indebted for the following particulars. The bridge consists of four two-hinged steel arches with tie beams, the spans having a length of 193½ ft., 271 ft., 271 ft., and 193½ ft. respectively. The tie beams are placed at deck level.

The bridge was blown up by German army engineers in March, 1945, with the result that the northernmost of the two central spans was almost completely destroyed and the other one partly destroyed. The two lateral spans and all the piers and abutments remained more or less intact.

As the line is of great importance for the transport of Ruhr coal to Southern Germany, the repair was a matter of high priority. A rapid survey showed that about two-thirds of the old structure could be salvaged. As it was also essential to free the river from obstructions at an early date, it was decided to reconstruct the bridge to the former pattern, using as many of the old parts as possible. The work was entrusted to the M.A.N. Works, Gustavsburg, and Dyckerhoff & Widmann, Wiesbaden.

To speed up the work, salvage operations were begun simultaneously in both the central spans. For the north span, a large number of wooden piles was driven on the upstream and downstream side to carry the hoisting gear for the raising of the parts which had fallen into the river. At the same time, the arch of the south span, which had also fallen into the river, was dissected as necessary for the hoisting operations, and a working platform was erected on piles.

By that time the hoisting gear for the north span had been mounted. This gear consisted of one portal of 300 tons capacity, with four electrically-operated winches, each exerting a tractive effort of 15 *tonnes* over a six-part tackle, so that 90 tons could be lifted, and one portal of 300 tons capacity with four hydraulic jacks. This gear proved most suitable, and, once it was mounted, the hoisting operations were merely a matter of hours.

Similar gear was used to lift the parts of the arch in the south span. Here, the main difficulty was to compensate the elastic and permanent deformations which the arch had suffered through the drop and the long exposure to abnormal stresses.

The completion of the north span was scheduled for March, 1947, and was to be followed by the re-assembly of the south span. Because of severe frost in February, 1947, the river was completely frozen until the sudden advent of milder weather on February 22 brought about imminent danger of flooding. By using teams of 320 men on intensified day and night work, the assembly of the north span was completed in the early morning of February 26, only two hours before the upstream platform carrying the hoisting gear was destroyed by the drifting ice. The portal, deprived of its support, came to rest on the upper flange of the arch, which had only just been made self-supporting by restoration of the tie beams.

The working platform in the south span was also destroyed by the ice, but the portal was able to be moved in time on to the pier, and suffered no damage. Work was renewed after the floods had receded, and the bridge was ready for the summer timetable, 1947. The aggregate weight of the two central spans is 1,124 *tonnes*, including 370 *tonnes* of new material and another 350 *tonnes* of salvaged and re-assembled material.

ELECTRIC LOCOMOTIVES FOR MANCHESTER-SHEFFIELD LINES.—In connection with the Manchester-Sheffield-Wath scheme, eighty-four mixed-traffic electric locomotives are being built in the Eastern Region Gorton Works; the electrical equipment is being supplied and installed by the Metropolitan-Vickers Electrical Co. Ltd. Fifty-seven of the locomotives will be of the Bo + Bo type, 28 of which will be built this year, and the remainder during 1951 and 1952; 27 locomotives will be of the Co + Co type and their construction will be completed by the end of 1952. The first of the Bo + Bo locomotives, which is nearing completion at Gorton, will shortly be handed over to the Metropolitan-Vickers Electrical Co. Ltd. for the installation of electrical equipment. A section of the steam-locomotive shops at Gorton has been laid out for the construction of electric locomotives on a progressive system having three main stages: sub-assemblies of all the main mechanical parts; complete construction of the bogies; erection of bodies and final assembly of bodies and bogies. The prototype Bo + Bo locomotive, which was described in our March 7, 1941, issue, ran for some years on the Netherlands Railways; experience gained there has enabled improvements and refinements to be incorporated in the locomotives now being built.

Concrete Standards for Overhead Electrification

Mass production of pre-stressed units for the Netherlands Railways

IN our issue of October 28, 1949, we referred to overhead electrification standards of pre-stressed concrete being used by the Netherlands Railways. Further details of the mass production of these standards have been given in two papers read before the Netherlands Concrete Association and published in our contemporary, *De Ingenieur*. The authors are Messrs. C. van Leeuwen and C. Verruijt, Junior, directors of the Nederlandsche Spanbeton Mij., who are mass-producing these standards for the Netherlands Railways in their factory at Alphen-on-Rhine.

The system is based on the Weinberg system used by the French Railways, though with important modifications. The Weinberg standards consist of vertical and horizontal members which are independently subjected to the pre-stressing process and assembled afterwards; the Dutch standards are produced in a single casting process. This has been achieved by the use of diagonal instead of horizontal bracings, so that, by pre-stressing in the longitudinal direction of the standard, it is also possible to impart a pre-stressing effect on the bracing. This improvement in the production technique has entailed a saving in man-hours of some 40 per cent.

There are also important differences in the actual production process. Whereas the Weinberg standards are cast in fixed moulds, the Dutch production is based on elaborate production cycles, where the moulds are shifted once every hour. Each cycle extends over eight hours, producing eight elements. There are two such cycles for standards and one for transoms, so that eight complete portals (consisting of two standards and one transom) are produced every day. The ready-cast elements are steam-heated overnight to accelerate the curing process.

The reinforcement steel is prepared in a separate section of the factory, where the wires are pre-stressed on a special bench at a tension which is approximately 10 per cent. higher than the eventual pre-stressing tension. This has the advantage that faulty wires can be eliminated in advance without holding up the main production cycle. The actual pre-stressing effort is imparted by means of a hydraulic pump, the pressure being controlled by manometer readings.

Operating Difficulties on the Bergen-Oslo Railway

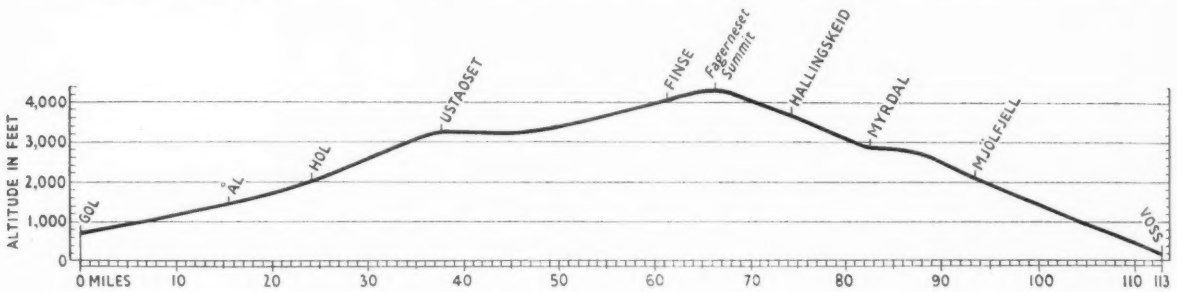
A remarkable series of snow sheds and fences is one of the features of the line linking the two chief cities of Norway

THE mountainous nature of the country, the sparseness of the population and the severity of the climate have influenced and often retarded railway construction in Norway. The present route mileage is 2,704 of which 431 are electrified. Oslo, the capital, and Bergen, the second largest city and chief port on the west coast, remained unconnected by railway until November, 1909. They are separated by the Hardanger Mountains, which are generally well over 4,000 ft. high. The distance in a straight line is rather less than 200 miles, but detours are necessary on the railway, making the actual distance 306 miles.

A railway was first proposed about 1870, but it was not then deemed feasible to build the whole line. In 1875, however, the municipality of Bergen was instrumental in obtaining powers for a railway from that city to Voss, at the foot of the great mountain range. Although it was expected that the railway eventually would form part of a trunk route, it was laid to a gauge of only 3 ft. 6 in. Some long tunnels and heavy earth works were avoided by choosing a rather circuitous route of 67 miles, beside the Sor Fjord, the Bolstad Fjord, and the Voss River. The difference in level between Bergen and Voss is about 180 ft. and except for some short, sharp rises and falls, the gradients were easy. The railway was opened on July 11, 1883, and, although tourist traffic in Norway was still in its infancy, the scenic attractions of the route soon made it popular with summer visitors.

The scheme for a railway from Bergen to Oslo was not allowed to die, but eleven years elapsed before it was revived with success. Meantime, several routes from Voss across the mountains were surveyed, and much useful data on snowfalls, wind pressures, and general climatic conditions obtained. Eventually, it was decided to recommend the shortest of the lines surveyed, although it rose to a height of well over 4,000 ft., and included many miles of steep gradients.

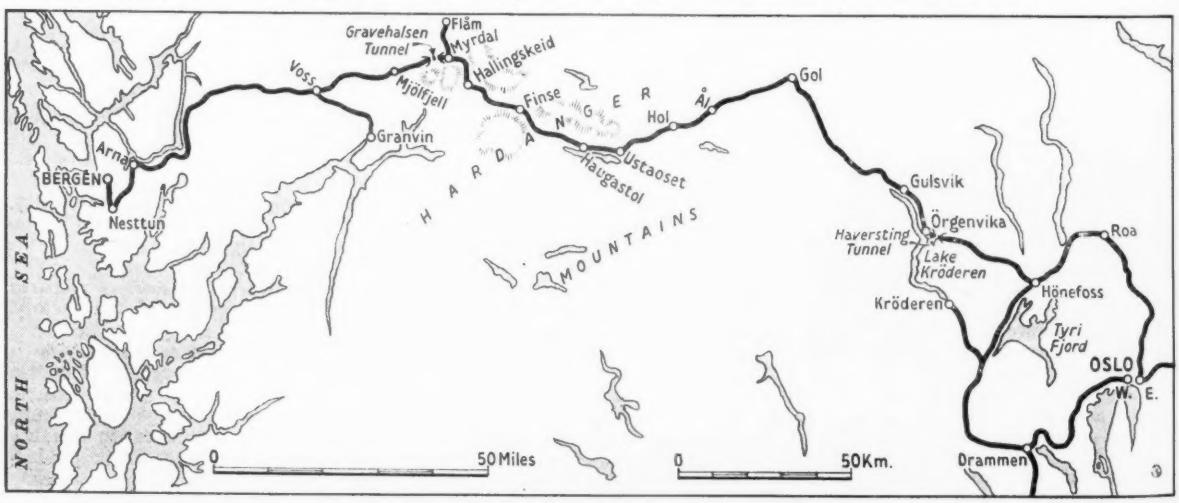
In 1894, powers were obtained for a line running from Voss up the precipitous valley of Raundal, through a long tunnel under the Urhovde Mountains to Myrdal, up Finsedal to a summit at Taugevatn, and down Ustadal, and Hallingdal, to Honefoss, and Roa, where it was to join the railway running northward from Oslo to Gjovik. The distance from Voss to Roa was 204 miles, and the total distance from Oslo to Bergen was 306 miles. The railway was to be of standard gauge, and powers were obtained to convert the gauge of the railway from Bergen to Voss. This conversion was carried out between 1898 and 1904.



Condensed profile of the mountain section from Gol to Voss

In August, 1895, a contract was let for the construction of Gravehalsen Tunnel (immediately west of Myrdal). The tunnel is 3 miles 529 yd. long, and is by far the longest on the line. It is driven through particularly hard solid granite, and is unlined throughout. The headings driven from each end met on July 4, 1902, but the full-size bore was not completed until 1906.

The construction of the remainder of



Map of the Bergen-Oslo line, Norwegian State Railways

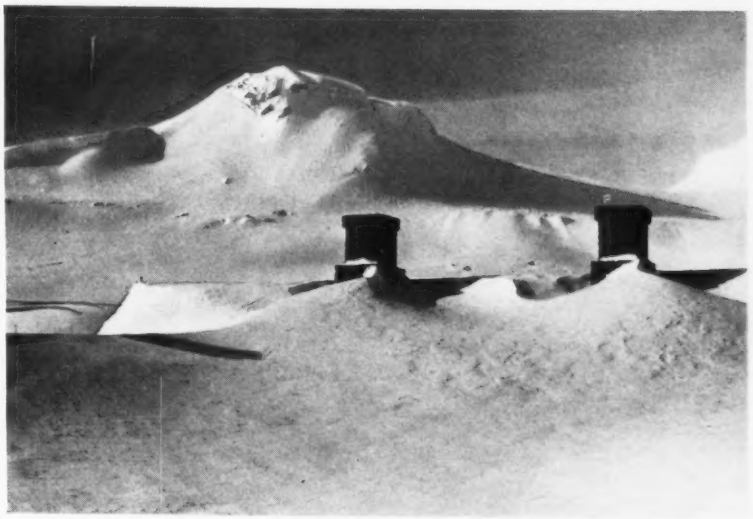
the railway was undertaken by the Norwegian State Railways. The work included many tunnels, the longest of which were the Haversting, 1½ miles long, between Sokna and Orgenvika, and the Reinunga, 1 mile long, east of Myrdal. In the tunnels, work proceeded without interruption, by day and by night, but on the open mountainsides, construction was possible only during the late spring and summer.

Opening of the Railway

The laying of the permanent track on the mountain section was begun in 1906; and on October 7, 1907, the construction gangs advancing from the east and west met at Ustaoset, 75 miles from Voss, and 128 miles from Roa. The 152 miles from Voss to Gulsvik were opened in December, 1907, but heavy snowfalls during the new year closed the railway for several months, and regular traffic did not begin until the spring of 1908.

The unfinished state of the Haversting Tunnel delayed the opening of the remainder of the line, and it was not until December 1, 1909, that regular services were begun between Bergen and Oslo, after an official opening ceremony by King Haakon, two days earlier. In the meantime, passengers and freight had been ferried over Lake Kröderen, from Gulsvik, to Kröderen Station on the railway to Drammen and Oslo.

The mountain section of the Bergen-Oslo Railway extends for 70 miles, from Hol to Mjofljell, both of which stand at an altitude of 2,000 ft. The intervening summit, at Fagerneset, some five miles west of Finse, is 4,293 ft. above sea-level. In Norway, the forests of conifers, which afford efficient protection against deep snowdrifts, do not extend far above the 2,000 ft. contour, and give place to the more hardy type of mountain vegetation, in which birch trees predominate. Even the stunted dwarf birch disappears before Finse is reached, and for more than 30 miles the railway runs above the tree line. The task of keeping the railway open for traffic during the winter months is thus rendered the more difficult.



The station buildings at Finse buried in snow after a blizzard

Protective Works

About 12 miles of the mountain section are covered completely with snow sheds, and nearly 30 miles are screened with snow fences. A special maintenance staff of 20 carpenters is employed throughout the summer months in repairing the protective works. Many of the snow sheds have side windows, which are removed in summer, to provide additional ventilation, and to afford travellers glimpses of the magnificent scenery. At Hallingskeid (3,642 ft. above sea-level) the station is in a very exposed situation, and is completely enclosed in a snow shed. As a precaution against avalanches, the portals of several of the tunnels are protected by snow sheds.

In at least one instance, the protective works extend beyond the immediate limits of the railway. At the eastern end of the Reinunga Tunnel, a covered way has been provided for the length ganger, to enable him to pass to and from his house on the hillside.

A careful study of local weather conditions has determined the direction from which deep snowdrifts are likely to occur, and the snow fences have been erected on that side of the line. For that reason, they are not always parallel to the track, and may be situated at a considerable distance from the railway. In some cases, it has been found neces-

Ustaoset Station, in Upper Hallingdal, a typical roadside station on the Bergen-Oslo Railway

East end of Reinunga Tunnel, showing the covered way to enable the ganger to reach the railway from his house after a heavy snowfall

sary to provide fences on both sides of the line.

Wherever possible, in open country, the railway was laid above the surface of the ground. This helps the wind to keep the track clear of snow, which is always dry and loose in these northern latitudes. Four rotary snow ploughs (two stationed at Finse, and two at Myrdal) are in almost constant service throughout the winter, and train engines are fitted with a plough on the front buffer beam.

One of the schemes for modernising and improving the Bergen-Oslo Railway provides for a new line between Finse and Hallingskeid, 2¾ miles shorter, and more easily graded, than the existing route. This section is one of the most difficult and expensive to maintain and operate. During the winter months, the snowdrifts frequently attain a depth of 50 ft., and snowfalls in May and June are by no means unknown. The deviation would include a tunnel, six miles long, and would replace several miles of steeply-graded and exposed line on either side of the summit. It is estimated that the works would cost at least £1,000,000.

Several proposals have been considered for shortening the circuitous approach to Bergen. The latest scheme, estimated to cost about £800,000, is for a direct line, some seven miles long, from the outskirts of the city to a point on the shores of the Sor Fjord, between Arna and Garnes. This deviation would be easily-graded, and would be nearly 14 miles shorter than the existing line, *via* Nesttun, but would include a tunnel nearly six miles long running through the Ulrikken Mountain, near Bergen.

There is an even more ambitious scheme for the construction of a new line, more than 20 miles long, from Honefoss to Oslo, *via* the east side of the fresh-water Tyrefjord, at a cost of £1,000,000. Quite apart from its value in shortening the journey to Bergen by about 27 miles, it is claimed that the new line would assist in the development of the Oslo suburban services. The present route carries very little of this traffic.

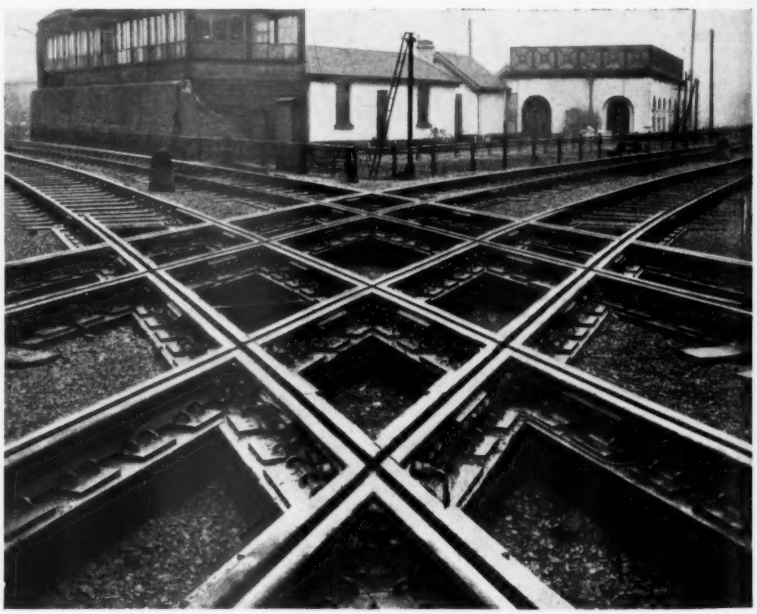
If these three major deviations were carried out, Bergen would be brought within 270 miles of Oslo, and some steep gradients and sharp curves would be avoided. The journey could then be made in 9 to 10 hours (an improvement of two hours on the present schedules) without materially increasing the average speeds of the trains.

At the present time, the policy of the Norwegian Government is to concentrate on the opening-up of the northern part of the country with new railways, the conversion of narrow-gauge lines, and making good the ravages of the recent war. The heavy losses in locomotives and rolling stock during the war years are steadily being made good, but some time must elapse before normal conditions are restored.

Flat-Bottom Rail for Built-up Crossings

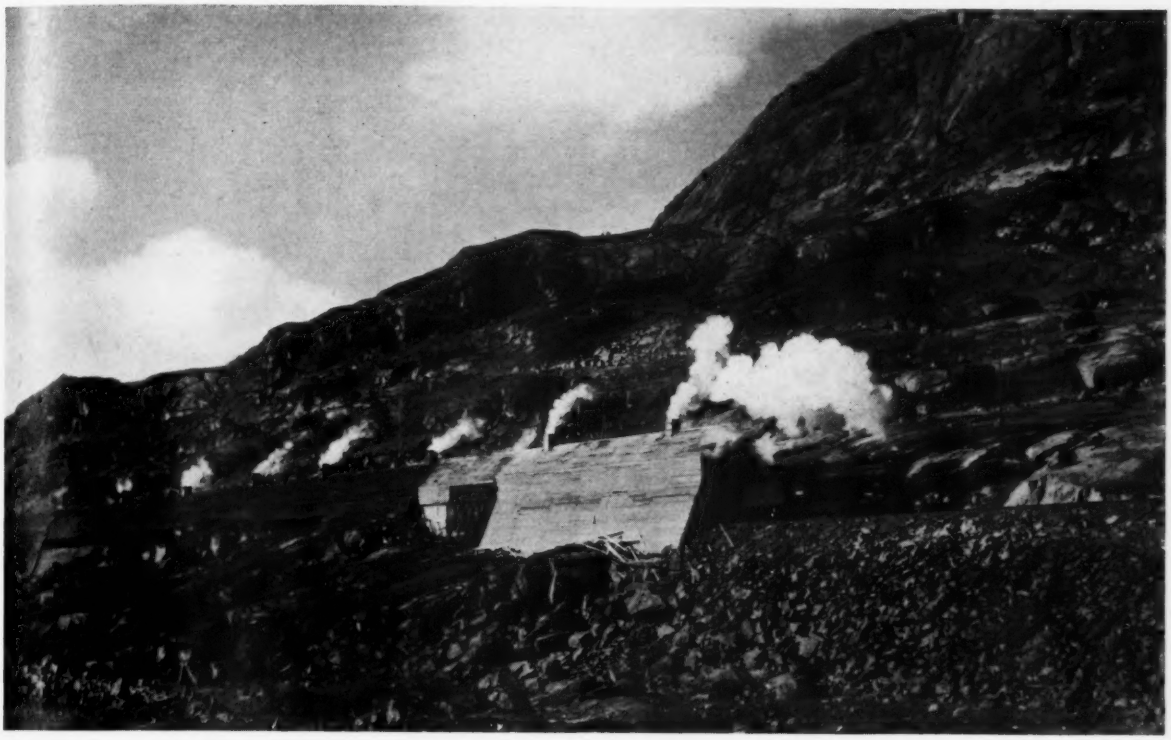
IN our January 13 issue there was a reference to the diamond crossings prefabricated from standard 109-lb. flat-bottom rail recently laid in the track of the East Coast main line at the north end of York Station in the North Eastern Region. There was also an illustration of the installation work in progress. The photograph reproduced on the right shows the completed crossing in position. Mr. J. Taylor Thompson, Civil Engineer, North Eastern Region, was responsible for the design and installation, while Mr. E. L. Triffit, District Engineer, York, was in charge of the work on the site.

This is the first time this type of rail has been used for built-up crossings, though it is now extensively used for plain renewal work, and an interesting feature in the present case is the use of elastic spike fastenings. The rails are laid on mild-steel baseplates 1 in. thick and with steel straps ⅞ in. thick and 1½ in. wide welded across the baseplates to form shoulders for the bottom flanges of the rails.



Flat-bottom rail crossing outside York Station

Operating Difficulties on the Bergen-Oslo Railway



Train emerging from a snow shed on the mountain section

Interior of a snow shed in summer, showing the side windows removed

Operating Difficulties on the Bergen-Oslo Railway

A rotary snow plough in action at Finse

Train approaching mouth of snow shed in winter

Window Glazing for Coaching Stock

Methods which eliminate the use of channels, metal window sections, and pans, and give a watertight frame

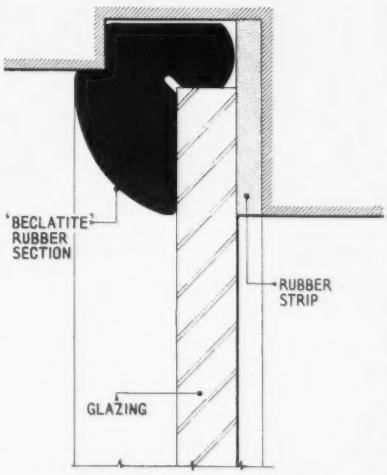
WITH the object of providing an inexpensive coach window, the glass of which can be replaced in a few minutes without the necessity of removing fillets, finishers, and panelling from the interior of the coach, the firm of Beckett, Laycock & Watkinson Limited, Acton Lane, London, N.W.10, has developed new methods of glazing which it is claimed reduce fitting and maintenance costs and eliminate the need for special glazing channels, metal window sections, and window pans.

The design ensures maximum speed of construction of fixed windows, and, in some cases, the fixed glasses of horizontally sliding and half-drop windows can be glazed in the same way; the method can also be used for retaining timber or metal panelling, and complicated arrangements of pillars, cantrails, and waistrails are not required.

Beclatite Glazing System

The Beclatite system consists of wedging a specially shaped rubber section against the glass in such a manner as to build up a considerable pressure on the glass face, thus ensuring a watertight frame; no cement, gold size, or adhesive of any kind is required. The rubber section can be easily inserted by hand, but where used extensively the Beclatite glazing gun can be used to speed up the operation.

The pressure on the glass is obtained by having a short distance between the bead and the nose of the rubber section, so that when the nose has moved the full distance from its free position, the generated pressure is entirely on the glass face and not dissipated into any large bulk of rubber. Furthermore, when using the gun, approximately 13 in. of rubber section per foot of glazing run are inserted, so that after glazing, the compressed rubber will "creep" towards the joints, creating a considerable longitudinal pressure at these points.



Beclatite system of glazing

For a window 3 ft. × 2 ft., the total sealing pressure on the glass perimeter will be as much as 360 lb. To deflect such a glass ⅛ in. against the Beclatite rubber section would require a load of approximately 0·75 ton. This method is suitable for windows with both square and rounded corners, the minimum radius recommended being 1 in. The design of the No. 1 glazing gun is such that awkward positions may be overcome by the use of an indexing head which alters the relationship between the nose and handle grip; the gun also automatically lubricates the rubber section as it passes through the barrel, thus making the insertion easy.

Flexatite Method

From Beclatite was developed the Flexatite system, which eliminates the necessity for the provision by the carriage builder of a shape to take the rubber glazing section. This is achieved by having a flexible light-alloy section. There are two types available; these are (*a*) a "clip-on" metal section clipped to the upstanding edge of the coach panelling and (*b*) the "screw down" metal section for use on all timber or composite bodywork. The minimum radius for rounded corner windows can be as small as 2 in. Once these metal sections are fixed in position they become integral with the coachwork and do not need to be removed.

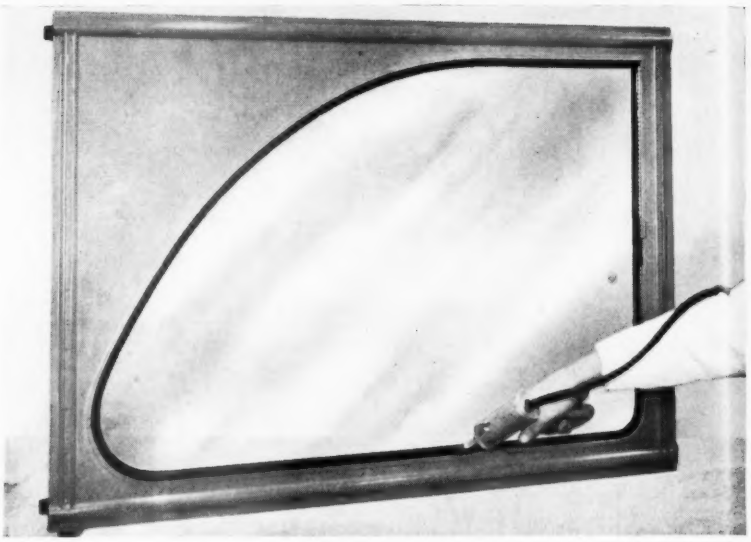
The flexibility of these metal sections makes the problem of irregularly shaped windows, and provision of swept or curved window pans, a simple matter; the manufacture of such pans is costly, and absorbs a high percentage of labour in tooling, jigging, and welding. Counter Beclatite rubber sections

The nibbing operation, securing the light-alloy section to the body framing

Showing the method of fitting the Counter Beclatite rubber to the flexible framing

are wrapped round the metal section and provide a backing for the glass as well as a watertight seal for fillets and finishers.

The actual glazing of the window is achieved in the same way as with the Beclatite system. In the case of the "clip-on" section a special nibbing tool is available to nip the section to the upstanding edge of the panelling.



View of the final glazing operation which is being carried out by the use of the No. 1 glazing gun

Kings Cross Terminus, London

A recent view of Kings Cross Station bearing the title "British Railways" superimposed on the name of the original owner, the Great Northern Railway. This terminus of the East Coast Route was designed by Lewis Cubitt and was opened in October, 1852

PLYMOUTH RAILWAY CIRCLE.—Membership of the Plymouth Railway Circle, which was formed in November, 1948, now exceeds 50 and includes a number from as far afield as Padstow and St. Austell. The circle meets fortnightly at the Swarthmore Hall, Plymouth, and at the present time includes both railwaymen and enthusiasts in its membership. Apart from papers, a number of visits to railway installations was arranged for the summer months last year, and a selection of photographs was contributed to the 1949 Plymouth Railway Centenary Exhibition.

RAILWAY NEWS SECTION

PERSONAL

WESTERN REGION APPOINTMENTS

The Railway Executive announces the following appointments:—

Mr. H. G. Bowles, Assistant to Chief Regional Officer, Western Region, to be Assistant Chief Regional Officer, Western Region.

Mr. F. Grundy, Executive Officer (Goods), Railway Executive Headquarters, to be Assistant Commercial Superintendent, Western Region.

Mr. K. J. Cook, O.B.E., M.I.Mech.E., M.I.Loco.E., who, as recorded in our January 20 issue, has been appointed Mechanical & Electrical Engineer, Western Region, British Railways, was educated at King Edward's School, Bath, and entered the Great Western Railway Locomotive Works at Swindon as a premium apprentice in 1912. His apprenticeship was interrupted by four years war service with the Mechanical Transport Branch of the A.S.C. in France and the Balkans, but he was successful in obtaining a three-year day studentship at the Swindon Technical College, and won the G.W.R. Chairman's Prize in 1921. In 1920 he entered the C.M.E. drawing office, and after a period in the experimental section, was, in 1922, appointed Technical Inspector in the Locomotive Works, Swindon. He was appointed Assistant to Locomotive Works Manager in 1923, Assistant Works Manager in 1932, and Locomotive Works Manager in 1937. His managership of the works extended throughout the second world war, during which he was responsible for a large production of direct war stores. He was A.R.P. Officer for the Swindon Area of the G.W.R., and Liaison Officer with Swindon Civic A.R.P. Controller. He relinquished control of the Locomotive Works in May, 1947, on being appointed Works Assistant to the Chief Mechanical Engineer, to whom, on January 1, 1948, he was appointed Principal Assistant. During his period at Swindon, Mr. Cook has held a number of positions in public life, including membership of the Juvenile Employment Committee; Local Employment Committee; and Wiltshire District Committee of the Regional Board for Industry; and he is Chairman of the Local Industrial Committee for Electricity Load-Spreading in North-East Wilts. Mr. Cook is a Vice-President of the Institution of Locomotive Engineers.

Mr. W. N. Pellow, M.I.Mech.E., M.I.Loco.E., who, as recorded in our January 20 issue, has been appointed Motive Power Superintendent, Western Region, British Railways, entered the service of the Great Western Railway in 1904 as an apprentice at the locomotive shed and repair shops at St. Blazey, Cornwall. He was transferred to Swindon Locomotive Works in 1908 to complete his apprenticeship, and subsequently obtained experience in the materials testing house. He entered the drawing office at Swindon in 1912, and after varied experience there was transferred in 1922 to the Newport Divisional Superintendent's Office as an Inspector. Subsequently he was appointed Assistant to the Divisional Locomotive Superintendent at Newport. In 1924 Mr. Pellow was transferred to Wolverhampton as Assistant Divisional Locomotive Superintendent, and in 1929 was appointed Assistant to the Locomotive Running Superintendent & Outdoor Assistant to the Chief Mechanical Engineer at Swindon. He was made Divisional Locomotive Superintendent at Bristol in 1931, and held

Mr. K. J. Cook

Appointed Mechanical & Electrical Engineer, Western Region, British Railways

Mr. W. N. Pellow

Appointed Motive Power Superintendent, Western Region, British Railways

The late Sir Herbert Walker, who was General Manager of the Southern Railway from 1923 to 1937, left £38,058.

Mr. J. B. Stephens has been re-elected Chairman of the Irish Railway Clearing House Committee for 1950.

PRESENTATION TO MR. G. L. DARBYSHIRE

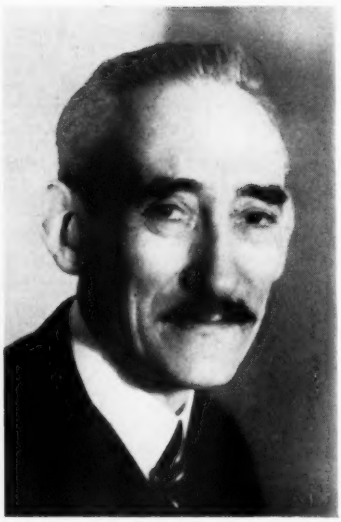
A luncheon was given at Paddington on January 27 by Mr. K. W. C. Grand, Chief Regional Officer, Western Region, British Railways, at which a presentation was made to Mr. G. L. Darbyshire, who retired at the end of last year as Chief Regional Officer of the London Midland Region. Those present included also Mr. John Elliot, Mr. C. P. Hopkins, Mr. C. K. Bird and Mr. H. A. Short, Chief Regional Officers of the London Midland, Southern, Eastern and North Eastern Regions, respectively. Mr. T. F. Cameron, Chief Regional Officer, Scottish Region, was prevented by illness from attending.

Mr. H. Randle

Appointed Carriage & Wagon Engineer, Western Region, British Railways

The late Mr. N. B. Walton

Executive Vice-President, Canadian National Railways, 1943-50



Mr. P. C. Durrant

Appointed General Agent for France of British Railways

that position until July, 1939, when he was transferred to the London Division as Divisional Locomotive Superintendent, with headquarters at Old Oak Common. In July, 1941, Mr. Pellow returned to Swindon on being appointed Locomotive Running Superintendent & Outdoor Assistant to the Chief Mechanical Engineer; that post has now been re-designated as Motive Power Superintendent.

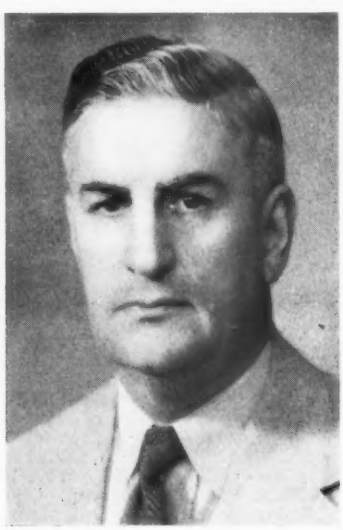
Mr. H. Randle, M.I.Mech.E., J.P., who, as recorded in our January 20 issue, has been appointed Carriage & Wagon Engineer, Western Region, British Railways, commenced his career with the Great Western Railway as an apprentice in the Locomotive Works at Swindon. In 1930, after several years experience in the drawing office, he was appointed Assistant to the Works Manager of the Carriage & Wagon Department, leaving that position in 1937 to become Assistant Works Manager of the Locomotive Works. In 1946 he was appointed Manager of the Carriage & Wagon Works. In 1947 he became Manager of the Locomotive Works, and he was made Works Assistant to the Chief Mechanical Engineer in 1948. Mr. Randle saw service in the 1914-18 war with the R.N.A.S. and R.A.F., and in the recent war with the R.A.O.C. (T.A.).

Mr. N. B. Walton, C.B.E., Executive Vice-President of Canadian National Railways, whose death, at the age of 65, we recorded briefly last week, was born at Palmerston, Ontario, and joined the then Grand Trunk Railway at Toronto in 1900 as a clerk and stenographer. Later he held the successive positions of Trainmaster at Wainwright, Alberta; Assistant to the General Superintendent at Winnipeg; Superintendent at Edmonton; Assistant General Superintendent, Prince Rupert; and General Superintendent, Winnipeg. In 1936 he was appointed Chief of Transportation for the Canadian National Railways system at Montreal. In 1938 Mr. Walton was made Vice-President in charge of Operations, including Maintenance and Construction, and he was promoted Executive Vice-President in 1943.

Mr. P. C. Durrant has been appointed General Agent for France of British Railways, in succession to the late Mr. A. M. Newbold. Mr. Durrant was educated at Janson de Sailly College, Paris, and Watford Grammar School, and joined the London & North Western Railway in 1906 as Assistant to the Goods & Passenger Agent in Paris. He was appointed Acting General Agent, Paris, for the L.M.S.R. in 1934. On the creation of a joint office for the four main-line companies in 1936 he became Assistant General Agent for France, which position he held until 1940. During the war, after an unsuccessful

Mr. W. H. Mortlock

Senior Assistant to Accountant, Eastern & N.E. Regions, British Railways, who has retired



Mr. J. T. Ferguson

Appointed Expenditure Accountant, East African Railways & Harbours

Mr. A. Y. McConnell

Appointed Revenue Accountant, East African Railways & Harbours

attempt to reach England, he joined the French railways, and, on the liberation of Paris, he went to the American Red Cross as a Director of its "Ranger" service, being responsible for establishing rest rooms and canteens for American troops at railway stations and airports in and around Paris. In 1945 Mr. Durrant was appointed Acting Agent for the Southern Railway at Gare St. Lazare, and in 1946 he resumed his appointment as Assistant General Agent. He is an Official of the Order of the Star of Roumania, and holds the Medaille d'Honneur of the French Government.

Mr. W. H. Mortlock, Senior Assistant to the Regional Accountant, Eastern & North Eastern Regions, British Railways, who, as recorded in our January 27 issue, has retired, commenced his railway service in the Chief Accountant's Audit Office of the Great Northern Railway. In 1908 he was transferred to the Book-Keeper's Section, and was associated with most of the sub-sections of that office. Shortly after the amalgamation he was attached to the Statistical Section of the Chief Accountant's Office, to undertake work in connection with the ascertainment of the standard revenue of the L.N.E.R. After the "appointed day" had been fixed by the Railway Rates Tribunal, Mr. Mortlock returned to the Book-Keeper's Section, where he remained until his appointment in 1942 as Chief Staff Clerk, Chief Accountant's Department. In 1943 he was appointed Hotels Accountant of the L.N.E.R., and in 1947 was made Assistant to the Chief Accountant.

Mr. J. T. Ferguson, who, as recorded in our January 6 issue, has been appointed Expenditure Accountant, Chief Accountant's Department, East African Railways & Harbours, was born in Scotland in 1900, and was educated at Barrhead High School. He entered the service of the Glasgow & South Western Railway in 1915. Mr. Ferguson joined the Accounts Department of the former Uganda Railway in 1924, and was promoted Assistant Accountant in 1935. He became Revenue Accountant, Kenya & Uganda Railways & Harbours, in 1942. Mr. Ferguson is a Fellow of the Association of Certified Corporate Accountants.

Mr. A. Y. McConnell, who, as recorded in our January 6 issue, has been appointed Revenue Accountant, Chief Accountant's Department, East African Railways & Harbours, was born in Scotland in 1900, and received his education at Linlithgow Academy. He joined the North British Railway in 1914. In 1925 he was appointed to a post in the Accounts Department of the former Uganda Railway, and he became Chief Cashier in 1940, and, two years later, Assistant Accountant. He was appointed Senior Accountant in 1946, in charge of the Accounts Branch at Kilindini Harbour.

Presentation of Portrait to Mr. Duncan Bailey

At the Royal Victoria Station Hotel, Sheffield, recently, the associated members of the private rolling-stock industry in this country made a presentation of his portrait in oils, painted by Mr. David Jagger, R.O.I., to Mr. Duncan Bailey, Chairman of Charles Roberts & Co. Ltd. Mr. A. J. Boyd, Managing Director of the Metropolitan-Cammell Carriage & Wagon Co. Ltd., and President of the Railway Carriage & Wagon Builders' Parliamentary Association, who made the presentation on behalf of the members, said that, in view of Mr. Duncan Bailey's long and active connection with the rolling-stock industry, now extending over sixty years, his colleagues desired to show their appreciation of his valuable work in the interests of the trade. In acknowledging the gift, Mr. Bailey said how deeply indebted he was to all those who had made it possible, and added that he looked on it not only as a recognition of his own work but as a tribute to the splendid work of the private rolling-stock industry under private enterprise and of the numerous companies concerned.

The late Mr. W. H. Birch, who was Chairman of Birch Bros. Ltd., left £151,430.

We regret to record the death on January 24, at the age of 68, of Lt.-Colonel L. H. Kirkness, C.I.E., D.S.O., O.B.E., Secretary of the Indian Railway Board from 1933-36.

Mr. R. A. Stavert left England recently to take up an appointment as Resident Representative for John I. Thornycroft & Co. Ltd. for India & Ceylon.

We regret to record the death on January 26 of Dr. A. R. J. Douglas, F.R.C.S., M.D., sometime Chief Medical Officer, Burma Railways.

Viscount Runciman of Doxford, a former Director of the London Midland & Scottish Railway Company, who died on November 14 last, left (unsettled estate) £976,659.

Mr. M. G. Lemaire has been appointed Head of the Railways Section, Transport Division, United Nations Economic Commission for Europe. From 1946 until the beginning of this year Mr. Lemaire was Director of Finance of the Belgian National Railways.

Mr. N. Randall has retired as a Director of Glyn, Mills & Company, and Mr. B. F. G. Currie has relinquished his position as a Managing Director, remaining on the board. Messrs. E. O. Faulkner, J. P. R. Glyn, and J. N. Hogg have been appointed Managing Directors.

Mr. Luís María César and Mr. Placido Severo Polo have been appointed General Manager and Sub-Manager, respectively, of the Domingo Faustino Sarmiento (former Buenos Ayres Western) Railway. Mr. Miguel Lopardo has been made Chief of the Traffic Department of the same railway.

Mr. G. D. Ramoni has retired from the service of the General Mitre (former Central Argentine) Railway. He was appointed Stores Superintendent of that railway in 1947, but after its purchase by the Argentine Government, his services were used in the Way & Works Department until the time of his retirement.

Mr. W. O. Reynolds, M.B.E., Assistant District Superintendent, Nottingham, Eastern Region, British Railways, who has been appointed Assistant District Superintendent, Doncaster, entered the service of the L.N.E.R. in 1933, and after experience at a number of stations in the North Eastern Area, was transferred to the Divisional General Manager's Office at York. He became a traffic apprentice in 1936 and was appointed Assistant to the District Superintendent, Manchester, in 1939, at the conclusion of his training. He joined the Royal Engineers in 1940, and was demobilised in 1946 with the rank of Lt.-Colonel, having been awarded the M.B.E. and twice mentioned in dispatches. Mr. Reynolds was appointed Assistant to the District Superintendent, Stratford, in 1946, and in the next year went to a similar position at Doncaster. He was promoted Assistant District Superintendent, Lincoln, in February, 1948, and in December of that year took up the position which he now vacates on his new appointment.

The late Sir William Thomson, who was Chairman & Managing Director of the Scottish Motor Traction Co. Ltd., left (personal estate in England and Scotland) £286,766.

Mr. T. G. Wintour, lately Assistant to the Chief Mechanical Engineer, Buenos Ayres Great Southern and Western Railways, has been appointed Chief Mechanical Engineer of the Paraguay Central Railway, in succession to Mr. N. C. W. Bellerby, who has retired.

Mr. T. G. Creighton, Director of Mechanical Engineering & Stores, Railway Division, Ministry of Communications, Pakistan, is acting as Director-General of Railways, Government of Pakistan, subsequent to the death of Mr. Mohammad Nizamuddin.

Mr. J. F. B. Jackson has been appointed Director of Research to the recently-formed Research & Development Division of the British Steel Founders' Association. Before this appointment he was Chief Metallurgist & Technical Controller (Foundries) to David Brown & Sons (Huddersfield) Ltd.

The Trades Union Congress representative on the industrial mission to Pakistan, to which reference was made in our January 20 issue, has now been appointed. He will be Mr. G. H. Bagnall, formerly a member of the T.U.C. General Council, and at present Chairman, East & West Ridings Regional Board for Industry.

Mr. S. A. Reitsma, who is 74 years of age, and has been Editor of our contemporary, *Spoor- en Tramwegen*, since its first appearance on July 10, 1928, has retired from that position. He had formerly been in railway service in the Netherlands East Indies. He is succeeded by Mr. O. C. A. van Loon, formerly an officer of the same lines which Mr. Reitsma had served.

When giving details recently of proposals for a merger of the British Tourist & Holidays Board and the Travel Association into a new body to be entitled the British Travel & Holidays Association, the President of the Board of Trade indicated that he intended to appoint Sir Alexander Maxwell, Chairman of the British Tourist & Holidays Board, to be Chairman of the new Association.

Mr. J. W. Hargreaves has retired from the position of General Manager of the Renfrew & Dumbarton Works of Babcock & Wilcox Limited, and is succeeded by Mr. I. M. Lyon, hitherto Assistant General Manager. Mr. A. S. Peacock has been appointed Assistant General Manager of the Renfrew & Dumbarton Works; he was previously Manager of the Industrial Sales Section in the company's London office.

British Transport Commission Statistics

*Summary of the principal statistics for the four-week period ended December 4**

The decrease from the preceding period of 0·3 per cent. in British Railways staff was fairly evenly spread over the various grades. Wastage figures, of which no analysis is given, seem to point mainly to retirements and so on as the main cause of decrease. The fall in strength in the conciliation grades was small. Recruitment, however, was small in relation to total strengths. Examples are running shed workshop staffs and railway police: in the former, to a strength of 14,706, there were recruited only 51, against a wastage of 85, with 11 inter-departmental transfers; in the latter, the corresponding figures are 3,615, 23, 41, and 2. The 0·6 per cent. increase in Road Haulage Executive staff is mainly due to acquiring other undertakings.

In traffic receipts, the continued fall in London Transport bus and coach receipts against the preceding period compares with decreases in B.T.C. provincial and Scottish road passenger transport undertakings' receipts. B.T.C. ship and vessel receipts fell, whilst there was a rise in dock and harbour takings.

Railway passenger journeys originating in October fell, largely seasonally, by 20 per cent. from the September total, but were 3 per cent. above the 1948 figure. Widespread issues of various kinds of excursion ticket accounts for a 60-per cent. rise over 1948 in this category of travel; but passenger receipts fell by 3 per cent. compared with October, 1948, and receipts from excursion tickets were only 12 per cent. of all passenger takings, of which 40 per cent. is provided by monthly returns. The average receipt per journey last October was 2s. 2d., whilst in 1948 it was 2s. 3¼d.

The slight increase over the preceding period in freight tonnage originating was fairly well spread over the Regions; the main increase again was in coal moved by the Western Region. Merchandise tonnage, however, dropped by 4 per cent. from last year's figure; and merchandise and mineral traffic receipts showed decreases on the corresponding period in 1949, though coal receipts rose slightly.

* British Transport Commission Statistics, 1949 Series No. 12. Period to December 4. London: British Transport Commission. Price 1s.

STAFF

—	Commission's Head Office	British Railways	London Transport	British Road Services (Road Haulage)	Road Passenger (Provincial and Scottish)	Hotels & Catering	Ships, Vessels & Marine	Docks, Harbours, Wharves, and Inland Waterways	Railway Clearing House	Common Services: Commercial Advertisement	Total
No. of employees	230	626,884	99,915	66,131	55,681	16,318	5,816	24,767	660	154	896,556
Inc. or dec. ...	—1	2,174	266	377	254	339	12	12	4	2	2,687

1. BRITISH TRANSPORT COMMISSION RECEIPTS

—	Four weeks			Aggregate for forty-eight weeks		
	To Dec. 4, 1949	To Nov. 28, 1948	Inc. or dec.	1949	1948	Inc. or dec.
	£000	£000	£000	£000	£000	£000
British Railways						
Passengers	6,240	6,910	670	105,640	113,985	8,345
Parcels, etc., by passenger train... ...	2,288	2,250	38	26,773	27,017	244
Merchandise	6,338	6,788	450	74,229	77,095	2,866
Minerals	2,456	2,542	86	27,311	26,743	568
Coal & coke	5,616	5,615	1	62,815	60,714	2,101
Livestock	212	189	23	1,415	1,251	164
	23,150	24,294	1,144	298,183	306,805	8,622
British Railways C & D. and other road services ...	677	639	38	7,993	7,944	49
Ships and Vessels	522	570	48	9,950	9,144	806
London Transport						
Railways	1,109	1,148	39	13,236	13,456	220
Buses & coaches	2,306	2,344	38	29,012	29,204	192
Trams & trolleybuses	826	846	20	10,106	10,379	273
	4,241	4,338	97	52,354	53,039	685
British Road Services Freight charges, etc.	4,463			33,263		
Road Passenger Transport	2,291	2,269	22	32,817	32,098	719
Docks, Harbours & Wharves	897	835	62	10,195	9,449	746
Inland Waterways	116	106	10	1,407	1,246	161
Hotels & Catering	950	988	38	12,265	12,295	30

2. BRITISH RAILWAYS

(A) Passenger Journeys Originating in the Month of October

—	Region												Total	
	London Midland		Western		Southern		Eastern		North Eastern		Scottish			
	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.
Ordinary fares	932	20·6	641	2·8	1,873	2·2	796	8·9	111	33·3	235	26·0	4,588	10·2
Monthly returns	3,403	20·7	1,404	13·9	6,263	8·6	2,826	17·5	338	23·3	712	21·7	14,946	14·8
Excursion, weekend, cheap day, etc.	4,910	95·2	1,930	18·2	3,867	31·0	1,760	109·5	1,043	53·5	1,356	94·0	14,866	59·5
Workmen	5,797	2·8	1,763	5·2	6,680	4·4	3,399	2·4	866	8·2	918	6·2	19,423	0·6
Other descriptions ...	1,062	13·3	707	17·1	1,271	7·7	601	13·2	250	13·8	307	12·3	4,198	12·3
Season tickets	3,912	0·7	1,857	3·4	10,844	5·4	3,756	2·7	603	11·6	1,695	2·5	22,667	2·6
Total	20,016	6·6	8,302	1·5	30,798	3·4	13,138	1·2	3,211	0·3	5,223	4·6	80,688	3·2

(B) Freight Tonnage Originating

—	Region												Total	
	London Midland		Western		Southern		Eastern		North Eastern		Scottish			
	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.
Merchandise	1,386	0·7	759	7·8	277	7·8	624	8·4	564	3·2	654	5·1	4,264	4·3
Minerals	1,622	1·7	718	7·5	128	9·8	912	6·2	907	1·9	650	5·9	4,937	0·3
Coal & coke	4,670	2·1	2,305	10·9	278	10·5	2,218	5·1	2,672	6·4	1,650	2·1	13,793	4·5
Livestock	30	5·6	23	7·6	8	3·9	4	24·1	15	4·3	37	3·7	117	0·5
Total	7,708	1·7	3,805	2·7	691	9·1	3,758	2·8	4,158	4·0	2,991	1·3	23,111	1·7

(C) Net Ton Miles

	Region												Total	
	London Midland		Western		Southern		Eastern		North Eastern		Scottish			
	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.
Merchandise & livestock ...	199,110	−3·3	102,591	0·9	26,395	4·7	85,897	5·0	58,451	−11·1	88,202	−3·9	560,646	2·0
Minerals	138,393	−1·3	78,825	−2·1	16,529	4·0	96,415	3·7	33,725	−4·4	42,068	−2·9	405,955	0·6
Coal & coke	316,193	−4·5	145,016	−11·0	27,327	1·6	175,860	3·3	70,066	2·0	69,826	−7·6	804,288	3·7
Total, all classes of traffic ...	653,696	−1·4	326,432	4·8	70,251	0·3	358,172	−3·8	162,242	3·6	200,096	Nil	1,770,889	0·9

(D) Train Miles

	Region												Total	
	London Midland		Western		Southern		Eastern		North Eastern		Scottish			
	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.
Coaching train miles														
Steam—														
Loaded	4,021	2·9	2,995	4·7	1,467	0·6	2,519	0·7	982	0·3	1,708	1·0	13,692	0·2
Empty	109	8·5	131	8·0	43	2·8	91	7·9	37	7·7	52	0·4	463	1·0
Total loaded & empty ...	4,130	3·1	3,126	4·8	1,510	0·7	2,610	0·9	1,019	Nil	1,760	0·9	14,155	0·2
Electric—														
Loaded	437	2·7			2,938	0·2	137	625·9	94	0·9			3,606	3·9
Empty	17	2·8			61	2·2	8	294·8	9	5·6			95	3·4
Total loaded & empty ...	454	2·4			2,999	0·1	145	595·8	103	0·3			3,701	3·9
Freight train miles—														
Loaded	3,105	0·6	1,790	7·1	548	0·2	1,759	0·6	969	2·5	1,473	2·3	9,644	1·9
Empty	572	5·0	217	10·6	19	49·8	385	10·2	222	8·5	213	6·1	1,628	7·9
Total loaded & empty ...	3,677	1·2	2,007	7·5	567	1·3	2,144	1·2	1,191	3·6	1,686	2·8	11,272	2·8
Total train miles	8,261	0·9	5,133	5·8	5,076	0·4	4,899	3·7	2,313	1·8	3,446	0·9	29,128	1·6

(E) Freight Train Miles per Train Engine Hour

Region													Total	
London Midland		Western		Southern		Eastern		North Eastern		Scottish				
1949	1948	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948
6·70	6·40	8·62	8·87	8·66	8·61	7·82	7·56	9·67	9·12	9·68	9·08	7·94	7·67

(F) Locomotive Coal Consumption

	Region												Total	
	London Midland		Western		Southern		Eastern		North Eastern		Scottish			
		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.
Tonnage consumed (000s)	363	−0·9	184	2·9	77	−1·0	206	−3·3	94	−1·4	172	−3·6	1,096	−1·2
Lb. per engine mile	67·3	0·1	53·8	−1·0	57·0	−1·0	66·5	2·3	63·3	−1·5	72·9	−2·8	64·0	−1·3

(G) Rolling Stock Position

	Operating stock	Number under repair	Available operating stock	Serviceable stock in 1948
Locomotives	19,912	3,489	15,889	16,013
Coaching vehicles	56,231	5,487	50,744	49,361
Freight wagons	1,116,463	100,251	1,016,212	1,058,013

3. INLAND WATERWAYS

Tonnage of traffic and ton miles

	Tonnage	Per cent.	Ton miles	Per cent.
	000		000	
General merchandise	340	7·2	5,569	4·3
Liquids in bulk	128	−2·2	2,977	2·5
Coal, coke, patent fuel & peat	466	5·6	6,802	11·1
Total	934	5·0	15,348	6·8

4. LONDON TRANSPORT

(A) Passenger Journeys Originating

	Number	Per cent.
	000	
Railways	50,770	−2·3
Buses & coaches	208,790	−0·2
Trams & trolleybuses ...	90,185	−1·7
Total	349,745	−0·9

(B) Rail and Road Car Miles

	Miles	Per cent.
	000	
Railways	17,961	−0·6
Buses & coaches	23,681	−1·3
Trams & trolleybuses ...	8,548	−1·5
Total	50,190	−0·7

Permanent Way Institution Annual Meeting and Dinner

Sir Cyril Hurcomb and Field-Marshal Sir William Slim praise work of permanent way men on British Railways

The sixty-sixth annual winter general meeting of the Permanent Way Institution was held at the Institution of Civil Engineers, London, S.W.1, on January 28, 1950. The Chair was taken at 2.30 p.m. by the retiring President, Mr. J. Taylor Thompson, M.C., and the large attendance of members included representatives from every Section in Great Britain, and the Malayan Section.

Before commencing the business of the meeting, the Chairman announced the deaths of two Past-Presidents, Mr. George Elson (1928 to 1929) and Mr. Arthur R. Cooper (1933 to 1934), and as a mark of respect those present stood in silence.

The Chairman also announced that another Past-President, Mr. V. A. M. Robertson, C.B.E., M.C., had been elected President of the Institution of Civil Engineers for this year. In congratulating Mr. Robertson, and wishing him a successful term of office, the Chairman emphasised that the Institution of Civil Engineers was a most appropriate venue for the present meeting. In a brief reply, Mr. Robertson said that he could imagine no better use to which the meeting room could be put.

The Secretary, Mr. H. Janes, expressed regret at the death of Mr. J. A. Kay, Editor of *The Railway Gazette*, in July last. Mr. Kay had taken a keen interest in the Institution for many years, and always had been ready to give publicity to its activities.

Mr. Janes then reported on the activities of the Permanent Way Institution during the past year. The various committees had continued their work, and thanks were due to the members who had given their time to serve on them. The President had continued the practice of his predecessors in paying visits to the Sections, and his keen personal interest in the Institution had maintained and increased the enthusiasm of members. During the year over 200 meetings and visits had been held by the Sections, and the programmes arranged had maintained the high standard achieved in past years. A new Section had been formed in the Peterborough and Lincolnshire areas for members who were unable to travel to London to attend meetings.

The Sections in India had held several meetings, but the new Sections in Eastern and Western Pakistan had not yet begun regular activities, although preliminary arrangements were well in hand. The Malayan Section had been re-established on October 4, 1949, thanks to the efforts of Mr. J. Cruikshank, who was now in England, and was representing the Section at the meeting. The Treasurer of the Section, Mr. K. Kandiah, had kept the bank books throughout the Japanese occupation of Malaya, and it had been possible to re-establish the pre-war balances of more than $3,000.

The number of new members enrolled during the past year was 411. Of this number, 302 were elected Associate Members, which showed that the permanent way staff continued to take a keen interest in the Institution. Sixty-four members had transferred to a higher grade.

Three issues of the *Journal* had been published during the year under the editorship of Mr. H. Ormiston, and, in addition to the reports of the Council, General, and Section Meetings, 15 original papers had been printed. The Secretary had supplied about 400 copies of the Institution's text book, "British Railway Track—Design, Construction and Maintenance," and the present edition was not yet exhausted.

The Summer Convention had been held in Ireland, with headquarters in Dublin, for the first time since 1907. It had been decided to hold the 1950 convention in Sheffield from July 1 to July 6.

Election of President

Mr. V. A. M. Robertson then moved the election of Mr. J. C. L. Train, M.C., as President for the ensuing year. Mr. Train had held that office during 1947, but pressure of business after his appointment to the Railway Executive had compelled his resignation. Mr. W. K. Wallace seconded the motion, and Mr. Train's election was carried with acclamation. A vote of thanks to the retiring President was proposed by Mr. A. W. M. Dyke and carried.

Mr. Train then took the Chair, and Vice-Presidents were elected as follows: England, Mr. D. D. Shaw; Scotland, Mr. W. Paterson; Wales, Mr. J. Cunningham; Ireland, Mr. C. H. Slater; Malaya, Mr. J. C. Fenwick; Sudan, Mr. C. T. Serjeant. The officers elected were: Secretary, Mr. H. Janes; Treasurer, Mr. F. Lawson; Editor, Mr. H. Ormiston; Auditors, Mr. Hector Hall and L. T. Starks.

The formal business was followed by an address by Mr. J. Taylor Thompson on "The Design of the New 109 lb. Flat-Bottom Rail," and the exhibition of a film showing the work of Norwegian railway men in keeping the Bergen-Oslo Railway open after a heavy snowfall.

The Annual Dinner

The annual dinner was held the same evening at the Railway Executive Headquarters, 222, Marylebone Road, when the newly-elected President, Mr. J. C. L. Train, M.C., occupied the Chair. The principal guests were Field-Marshal Sir William J. Slim, C.B.E., K.C.B., D.S.O., M.C., Chief of the Imperial General Staff, Sir Cyril W. Hurcomb, G.C.B., K.B.E., Chairman, British Transport Commission, and Mr. J. L. A. Cuperus, Chief, Way & Works Department, Netherlands Railways. Among those present were:—

Messrs. R. W. Bailey, G. Baker, G. B. Barton, W. F. Beatty, D. R. Bennett, W. H. Best, K. Brinsmead, J. I. Campbell, A. H. Cantrell, T. A. Carson, F. H. Colebrook, B. W. C. Cooke, E. C. Cookson, J. Cruikshank, E. R. Dashper, A. Dean, A. W. M. Dyke, H. L. Douglas, Lt.-Colonel R. H. Edwards, Messrs. H. B. Everard, M. Geilani, H. J. Green, C. D. D. Greig, P. Holdsworth, E. G. Horton, P. A. James, H. Janes, W. O. Johns, F. Lawson, F. Lloyd, C. Macgregor, K. C. Marrian, H. Ormiston, W. Paterson, J. N. Peck, J. Ratter, R. C. Rattray, H. E. Robarts, V. A. M. Robertson, L. G. B. Rock, W. Rothwell, M. G. R. Smith, L. T. Starks, S. A. Strange, N. W. Swinnerton, J. Taylor Thompson, A. K. Terris, J. A. R. Turner, W. K. Wallace, F. Wensley, and Lt.-Colonel G. R. S. Wilson.

In proposing the toast of the Permanent Way Institution, Sir Cyril Hurcomb said that the great growth in the Institution's membership since its small beginnings, 66 years ago, was a proof of the soundness of its foundations, its evident value, and its democratic character. The result was an extensive and expanding membership of some 5,000; Sections were able to meet regularly in this country; and the Institution's activities had spread to various parts of the Commonwealth. He was pleased that Mr. Train had been elected President for the second time. Mr. Train could hardly have discharged that office to his own satisfaction during the early months of his appointment to the Railway Executive, when the task of working out the new organisation pressed so heavily on him, but was now able to return, and give a lead.

Expenditure on Maintenance

Many of the critics of the efficiency and management of the railways paid scant regard to the obstacles, restrictions and shortages against which the Commission laboured. It would soon be possible to measure the operating results of railway administration in 1949. During that year British Railways had carried nearly 1,000 million passengers without a fatality in a train accident, a record which had not been reached since 1908. In view of the shortage of materials and wartime arrears, the permanent way men had had to use all their skill and resourcefulness to achieve the high standard of track maintenance expected in this country. Temporary speed restrictions, due to the state of the track, had been reduced over the year, and the standard of punctuality had improved, but there was still about a year's deferred maintenance to be overtaken. Track was being renewed at the rate of about 2,000 miles a year, and the cost of this renewal and maintenance had been about £30 million in 1948, and the figures for 1949 were not likely to be very different. About £48 million, or 16 per cent, of the total railway working expenses, had been spent on current maintenance and renewal of tracks and structures, and another £6 million, not charged to current revenue, had been spent on overtaking arrears. These charges represented a virtually irreducible cost, at present day prices, and must be met, if the standard of service and safety was to be maintained.

Economies, including a substantial reduction in staff, had been achieved, but the proper upkeep and safe operation of the railways necessitated a certain minimum expenditure, which no manipulation of figures or ingenious comparison with pre-war years could conjure away. Further economies in money and manpower would have to be made, and mechanical equipment and other means were being used to effect them. The next few months would be a difficult time for British Railways, but he was confident that the members of the Permanent Way Institution would do all in their power to make the ground firmer under their feet.

The President, Mr. J. C. L. Train, responded, and said that probably Sir Cyril Hurcomb had more in common with the members of the Permanent Way Institution and their department than with any other department of British Railways, because many of these men spent their lives in the open, close to nature. Sir Cyril was a keen student of natural history, and an expert ornithologist. Mr. Train recalled the honour conferred on Mr. V. A. M. Roberson, who had been elected President of the Institution of Civil Engineers. He believed that this was the first time that a Past-President of the Permanent Way Institution had held that office. He

also made brief reference to members and friends who were unable to attend the dinner. These included the Minister of Transport, Sir Eustace Missenden, Mr. A. S. Quatermaine, Mr. R. Carpmael, and Mr. S. L. Murgatroyd, who had been President as long ago as 1896.

Field-Marshal Sir William Slim proposed the toast of the Permanent Way Man. He said that, about two years ago, he had left one great national service, the Army, and joined another, British Railways, where he had met with nothing but kindness, help, and good comradeship from every grade of railwaymen, and not least from those of the Permanent Way Department. He found the atmosphere familiar because he was dealing with men who had a very high standard, and a great sense of duty to the organisation which they served. There were some 56,000 men in the Permanent Way Department, of whom about 41,000 were on fixed-length duties. When things went wrong, these men showed a courage that would be a great credit to any soldier, and, like soldiers, they did their job without much supervision.

Ganger F. Wensley, Western Region, responded, and recalled that he entered the railway service in 1914. In those days the permanent way men worked from 6 a.m. to 5.30 p.m., and received 19s. (in country areas) and 24s. (in industrial areas) for a 56-hour week, but these rates of pay were better than those received by farm workers. He thought that the first improvement had come in 1919, when the 48-hour week came into force, and the issue of wet-weather clothing had been another boon. Much had been said about "the good old days," but the permanent way men now worked a 44-hour week, and had much better conditions of service, and opportunities for gaining wider experience, and learning more about the technical side of their work.

The toast of "The Guests" was given by Mr. Taylor Thompson, who welcomed Field-Marshal Sir William Slim and Sir Cyril Hurcomb. A distinguished guest from overseas was Mr. J. L. A. Cuperus, who had been elected an Hon. Fellow of the Institution. Mr. Taylor Thompson also extended a warm welcome to Lady Slim, Miss Hurcomb, Mrs. Cuperus, and wives and relatives of members. The railway press was represented by *The Railway Gazette*, and *Modern Transport*. The railway press was an essential part of railway life, because it kept members well-informed, and maintained interest in railway matters.

Mr. Cuperus, in responding, said that he first became associated with the Permanent Way Institution in May, 1949, when members of the London Section visited Holland and inspected the engineering works in progress near Gouda. He had been honoured with election as an Hon. Fellow. He had been impressed with what he had seen of the activities of the Institution and intended to found a similar organisation in Holland. Mr. Cuperus asked Mr. Train to accept a book describing reclamation works in Holland, and gave the toast of "Prosperity to the Permanent Way Institution."

Mr. Train thanked Mr. Cuperus for his gift, which he accepted on behalf of the Institution.

The speeches were followed by a programme of entertainment by members of the staff of the Western Region.

Proposed Regrouping of Indian Railways

Mr. C. S. Rao, Financial Adviser & Chief Accounts Officer, South Indian Railway, presided at a debate on the regrouping of railways, held in Trichinopoly on December 24, 1949, by the South Indian Railway Accounts Society. He pointed out that mileage, volume of traffic, earnings, gauge, geographical position, workshop facilities, operational convenience, and yard facilities would have to be taken into account in determining the size of each Indian railway under the proposed regrouping. Because of the large mileage that would fall to each railway, the divisional system, as opposed to the departmental system, would be the ideal.

Mr. G. W. O. Moore, Deputy Chief Accounts Officer, South Indian Railway, who opened the debate, referred to the position of the divisional accounts officer under the proposed reorganisation; he would have to be an expert in diverse matters if he was to give efficient advice. The question of financial adjustments to be made in respect of the State lines to be integrated, district board lines, and branch lines owned by the French Government, but worked by the Indian Government, would also present problems.

Mr. B. G. Balakrishnan, Assistant Accounts Officer, said the urgent necessity for regrouping Indian railways had arisen from the partition of India and the integration of States, and that, apart from the efficiency resulting from cutting-out smaller units and economies that might result by the reorganisation, greater co-ordination between the units and the centre could be ensured. The system of regional organisation in force on British Railways might well be followed.

LUNCHEON IN DUBLIN FOR MR. J. H. BREBNER.—A luncheon was given recently at the Gresham Hotel, Dublin, by Mr. T. C. Courtney, Chairman of Coras Iompair Eireann, for Mr. J. H. Brebner, Chief Public Relations & Publicity Officer, British Transport Commission, who recently visited Ireland. Among others present at the luncheon were:—Messrs. A. J. Broughton, Irish Traffic Manager, London Midland Region, British Railways; O. V. Bulleid, Consulting Mechanical Engineer to Coras Iompair Eireann; G. B. Howden, General Manager, Great Northern Railway (Ireland), and special consultant to C.I.E.; R. D. Heard, General Manager, British & Irish Steam Packet Company; F. Lemass, General Manager, C.I.E.; F. S. Veltom, Traffic Manager for Ireland, Western Region, British Railways; and L. A. Luke, Public Relations Officer, C.I.E. (see illustration below).

Luncheon in Dublin for Mr. J. H. Brebner

Left to right: Messrs. A. J. Broughton, O. V. Bulleid, G. B. Howden, R. D. Heard, F. Lemass, J. H. Brebner, T. C. Courtney, F. S. Veltom and L. A. Luke (see paragraph above)

Notes and News

Costa Rica Railway Resumes Traffic.—The Costa Rica Railway Company announces that through traffic was resumed on January 15. The stoppage was caused by flood damage.

Signal & Telegraph Inspector Required.—The Sudan Railways require a signal and telegraph inspector, between 25 and 35 years of age, for service in the Sudan. See Official Notices on page 147.

Derailment in Tanganyika.—Eleven persons were killed and many injured when a train left the line and crashed down a steep incline near Dar-es-Salaam on January 24. All the dead were Africans.

Diesel Engine Users' Association.—At a meeting of the Diesel Engine Users' Association, to be held at Caxton Hall, Westminster, London, S.W.1, at 2.30 p.m., on February 16, there will be an informal discussion on operating problems.

Vancouver Rail Traffic Restarted.—The first train to reach Vancouver for seven days arrived on January 26, bringing coal, canned food, and meat, thus averting the threatened food scarcity. A cattle train and passenger train, which had been dug out of Fraser Canyon snowdrifts, arrived eight hours later. The airlift has flown 2,000 train passengers into Vancouver during the last five days. Serious dislocation of traffic caused by snowdrifts was referred to in our January 27 issue.

Dinner to Mr. H. R. Browne.—To mark his retirement from the position of Assistant Civil Engineer of the Great Northern Railway (Ireland), Mr. H. R. Browne was the guest of honour at a dinner given recently at the Gresham Hotel, Dublin. Among those also present were Messrs. G. C. F. Henry, K. Wilson, P. A. Foley, J. P. Lovegrove, T. G. Ramsay, and the following officers of the G.N.R.(I.): Messrs. T. J. Carton (District Superintendent), P. K. M. Carey (Solicitor), H. R. McIntosh (Mechanical Engineer), F. C. Wallace (Secretary), P. H. Patterson (Accountant), J. S. McCormick (Stores Superintendent), and H. S. Cochrane (District Engineer), C. H. Slater (Civil Engineer) and J. F. McCormick (Managerial Executive Officer) (see illustration below).

Batley Carr Station to be Closed.—On and from March 8, the Eastern Region Batley Carr Station will be closed. Parcels traffic hitherto handled at Batley Carr Station will be catered for at Dewsbury and Batley stations; goods-train traffic will be dealt with at Dewsbury Goods Depot, Eastern Region.

Cup-Tie Excursions.—The London Midland Region ran 30 special day and half day excursion trains from Derby, Stoke, Manchester, Northampton, Sheffield and Bolton for the football cup-ties on January 28. Cheap tickets at 40s. 4d. return were issued from Liverpool for the West Ham-Everton match by the ordinary midnight train to Euston.

Newhailes Station to be Closed.—As from Monday, February 6, Newhailes Passenger Station, Scottish Region, will be closed and thereafter long-distance passengers for Newhailes will be booked to Edinburgh. Motorbus and tramcar services operating between Edinburgh and Musselburgh are available. Passenger-train parcels and miscellaneous traffic will be dealt with at Musselburgh, where there is a collection and delivery service.

Industrial Truck Sales Organisation.—As from February 1, 1950, sales of Electricar industrial trucks, formerly marketed by Crompton Parkinson Limited, became the responsibility of I.T.D. Limited, 142, Sloane Street, London, S.W.1, which is now a subsidiary of Austin Crompton Parkinson Electric Vehicles Limited. As a result I.T.D. Limited, which already markets Stacatruc and Aerolift fork-lift trucks in all parts of the world, will henceforth be in a position to offer a wide range of trucks for practically all materials handling purposes. Spares and service for Electricars and Stacatrucs will be dealt with by Austin Crompton Parkinson Electric Vehicles, Service Department, Webb Lane, Hall Green, Birmingham, 28.

Standardisation of Tapered Roller Bearings.—A meeting of the Technical Committee of the British Standards Institution, held on January 18, decided that the B.S.I. standard for tapered roller bearings should contain inch sizes only. The firm of British Timken Limited has been asked to prepare a list of tapered roller bearings to comprise this range.

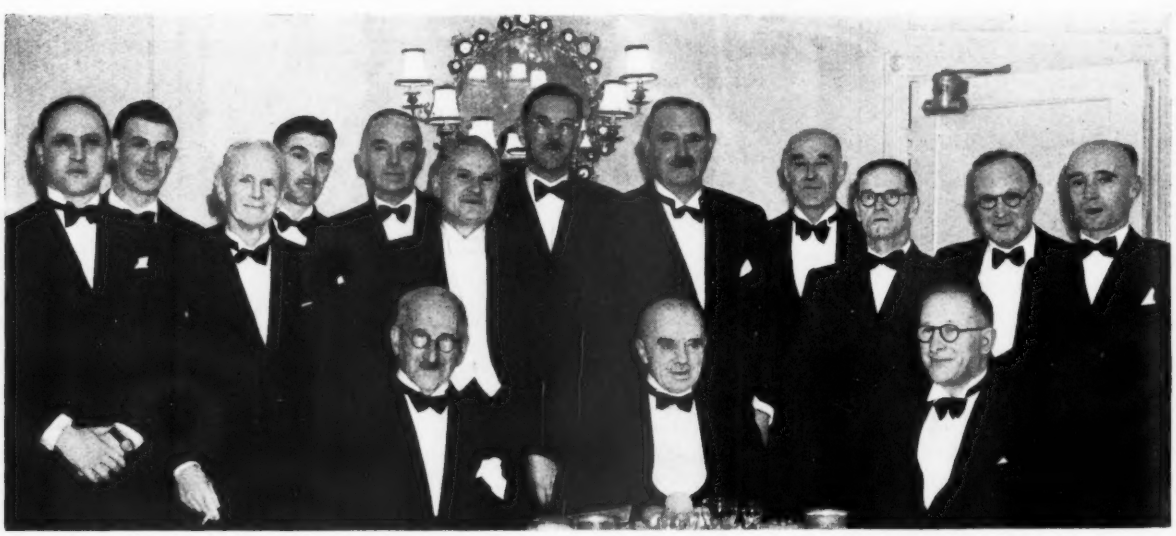
British Railways, Southern Region, Lecture & Debating Society.—Mr. R. E. Sinfield, Continental Superintendent, Southern Region, will read a paper on "Continental Traffic" to British Railways, Southern Region, Lecture & Debating Society, on February 15, at its meeting at the Chapter House, St. Thomas' Street, London Bridge, at 5.45 p.m.

G.N.R.(I.) Working Loss.—The directors of the Great Northern Railway Company (Ireland) state that the results for 1949 do not allow of the payment of any dividends on the guaranteed, preference, or ordinary stocks, and that there was a loss on working for the year of £91,497. A special explanation of the position will be furnished to stockholders with the accounts for the year.

British Railways, Western Region, London Lecture & Debating Society.—Mr. W. T. Geden, Stationmaster, Paddington, will read a paper on "The Work of a Large Passenger Station," at a meeting of British Railways, Western Region, London Lecture & Debating Society, to be held in the Clerks' Dining Club, Bishop's Bridge Road, Paddington, on February 16, at 5.45 p.m.

Hearing of Application for Higher Dock Charges.—The permanent members of the Transport Tribunal acting as a Consultative Committee will sit at 10.30 a.m. on

Dinner in Dublin for Mr. H. R. Browne



Standing (left to right) are Messrs. G. C. F. Henry, K. Wilson, P. A. Foley, J. P. Lovegrove, T. G. Ramsay, T. J Carton, P. K. M. Carey, H. R. McIntosh, F. C. Wallace, P. H. Patterson, J. S. McCormick, H. S. Cochrane; and, seated, Messrs. H. R. Browne, C. H. Slater and J. F. McCormick (see paragraph above)

Photo] [Independent Newspapers Limited

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

LONDON Firm of Engineers and Agents with 30 years' experience of handling Contracts with leading Railway Authorities and Consulting Engineers, would welcome two additional agencies for reputable manufacturers of Railway specialities who need an efficient London Office.—Box 607, c/o *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

SECTIONED PERSPECTIVE VIEW OF LOCOMOTIVE FRONT END. A notable drawing of L.M.S.R. class "7P" 4-6-2 locomotive of the latest type. Reprinted from *The Railway Gazette*, June 15, 1945. Price 2*s.* 6*d.* Post free 2*s.* 8*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

RAILWAY STORE METHODS. By W. H. Jarvis. Great Western Railway. The necessity for training officers—Organisation of stores department—Stores accounts. Cloth. 7¼ in. by 5 in. 116 pp. With diagrams. 4*s.* By post 4*s.* 3*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Sudan Government

THE Sudan Railways require a Signal and Telegraph Inspector for service in the Sudan, aged between 25 to 35 years. Candidates will be required to take charge of a District, and must have had outdoor experience in the maintenance and installation of mechanical signal apparatus, telegraph instruments, magneto telephones, selective ringing control telephones and single line tablet or token instruments. They should have had some workshop experience in the repair of such apparatus. Preference will be given to a candidate able to prepare signal diagrams, interlocking tables and working charts. Appointment will be on a Long Term Contract for a period of nine years on a salary scale ranging between £E.360 and £E.660 per annum, with special post-service gratuity. Cost of Living Allowance varying between £E.180 and £E.390 per annum, according to the number of dependents, is at present payable, and, subject to certain limitations an Outfit Allowance of £E.40 is payable on appointment. There is at present NO INCOME TAX in the Sudan. Free passage on appointment. Full particulars and application form may be obtained on application to: Sudan Agent in London, Wellington House, Buckingham Gate, London, S.W.1. Please mark envelope "Telegraph Inspector."

FACING and Boring Lathe with 10-ft. chuck, to swing 21 ft. max. dia. and 14 ft. length of work. Approx. wt. 90 tons. Fully motorised, and can be seen working. Details and photos. on request.—Box 611, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

STANDARD MILITARY RAILWAY BRIDGES. By F. S. Bond. A description of the different types of bridges designed for rapid erection in the field by the Allied Forces, and of the various methods employed in such erection. 28 pages. 9 in. by 12 in. fully illustrated. Paper cover, 5*s.* By post 5*s.* 2*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

MECHANICAL APPLIANCES FOR HANDLING RAILWAY TRAFFIC. By G. Bulkeley. An explanation of the employment of mechanical apparatus for handling and carting general goods. Cloth. 7½ in. by 5 in. 132 pp. Illustrated. 5*s.* By post 5*s.* 3*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

INTERNATIONAL RAILWAY ASSOCIATIONS. Notes on the work of the various associations concerned with International traffic, principally on the European Continent. 2*s.* By post 2*s.* 2*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Tuesday, February 7, 1950, at the Institution of Civil Engineers, Great George Street, London, S.W.1, to hear the application of the British Transport Commission to the Minister of Transport for authority to make additional dock and canal charges.

Bolivar Railway Sale Approved.—Sale of the Bolivar Railway to the Venezuelan Government was approved in principle at the general and class meeting of the company on January 26. The directors asked for power to conclude a sale provided the net amount available for disposal, after settlement of claims and expenses, be not less than £615,000.

Siamese Contract for Britain.—A contract has been placed with the Cleveland Bridge & Engineering Co. Ltd., Darlington, by the Siam State Railways for the rebuilding of bridges in Bangkok and other parts of the country. The contract, valued at over £800,000, was secured against competition from America, Japan, and France.

Booking Facilities at Euston Station.—As from February 1, seats and sleeping berths on trains from any other Region's London termini can be reserved at Euston Station, London Midland Region. This is an extension of the facilities introduced in December, 1949, whereby travel tickets from other London termini could be obtained at Euston, and was referred to in our November 25, 1949, issue.

Institution of Locomotive Engineers Visit Acton Works.—On the afternoon of January 27 more than 150 members of the Institution of Locomotive Engineers visited London Transport Executive railway rolling-stock overhaul works at Acton. The party, headed by the President of the Institution, Mr. W. Cyril Williams, was conducted round the works by W. S. Graff-Baker, Chief Mechanical Engineer (Railways), and members of his staff. It was the largest party of visitors in the history of the works.

Marshalls (Pakistan) Limited.—The firm of Marshall Sons & Company Limited, Gainsborough, announces the formation of a new company to represent the interests of the firm and those of other leading manufacturers in Pakistan. The new company is Marshalls (Pakistan) Limited, with head office at Sir Ganga Ram Trust Mansions, P.O. Box 68, The Mall, Lahore. Mr. N. M. Harrison, Director, assisted by Mr. H. K. Ames, Technical Sales Manager, will look after the interests of the firm in Pakistan. The home office of the new company is at Britannia Works, Gainsborough, Lincolnshire, and this will be looked after by Mr. Frank Bailey, Export Manager.

Royal Charter for Railway Benevolent Institution.—A Royal Charter has been granted by the King to the Railway Benevolent Institution which was established in 1858. During the past 92 years, gratuities have been granted to 366,559 persons, pensions have been given to 13,651 widows and disabled railway servants, and 3,911 children have been educated and maintained, the total amount distributed in relief being £3,784,494. The Institution runs both an orphanage and a home for aged railwaymen and their wives; it relies entirely on voluntary contributions, and more than 270,000 railwaymen contribute regularly. In 1863, Queen Victoria contributed to the funds, and the King, the Queen, and Queen Mary are its patrons. The President is Lord Balfour of Burleigh, and the Chairman is Mr. V. M. Barrington-Ward, Member of the Railway Executive.

Accident in Eastern France.—Nine persons were killed and 15 were injured in a crash between two local passenger trains on the Vesoul-Besançon line, Eastern France, on January 26. The dead included the two daughters of the gatekeeper of a level-crossing. The trains collided near the level-crossing, about 16 miles from Vesoul. The track is single, as the Germans removed the second track during the war.

Delegation of Powers to London Transport Executive.—The British Transport Commission has issued an Instrument (No. R/EX/13) revoking, subject to certain exceptions, the delegation to the Railway Executive of the functions of the Commission in relation to activities which it is empowered to carry on relating to various railways, including the White-

Meeting of the Board of Management of the Railway Benevolent Institution, on January 23

Left to right: Messrs. R. G. Davidson, V. M. Barrington-Ward, Chairman, H. C. Walton, General Secretary, C. H. Cowtan, Assistant Secretary, A. L. Castleman, T. J. Lynch, E. E. Painter, E. H. d'E. Darby, and H. Rudgard (see paragraph above)

chapel & Bow, Hammersmith & City, and many others. The Commission has further issued an Instrument (No. LT/EX/2) delegating to the London Transport Executive rights, powers and liabilities in respect of the same lines. Copies of both Instruments may be obtained from the Office of the British Transport Commission, 55, Broadway, Westminster, S.W.1, price 6d. each.

Tecalemit Limited.—The final dividend of Tecalemit Limited, for the year ended July 31, is to be 7 per cent. on doubled capital, equivalent, with the interim dividend of 6 per cent. already paid, to 20 per cent. on the former capital, as paid last year. Net profit is reported as £134,263 as compared with £139,254.

Forthcoming Meetings

February 6 (*Mon.*).—Institute of Transport, Metropolitan Section, at Livingstone House, Broadway, S.W.1, at 5.30 for 6 p.m. "The Transport Problems of the East Africa Groundnut Scheme," by Mr. M. Ormerod.

February 6 (*Mon.*).—Society of Engineers, in the apartments of the Geological Society, Burlington House, London, W.1, at 5.30 p.m. Presidential Address, by Mr. C. L. Boucher.

February 6 (*Mon.*).—Stephenson Locomotive Society, 32, Russell Road, Kensington, London, W.14, at 6.30 p.m. "The Midland & South Western Junction Railway," by Mr. C. R. Clinker.

February 7 (*Tue.*).—Institute of Transport, Midland Section, at the Imperial Hotel, Birmingham, at 6.30 p.m. "The Railway Executive and British Transport," by Mr. D. Blee, Member, Railway Executive.

February 8 (*Wed.*).—Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 6 p.m. "London Transport Telecommunications," by Mr. P. W. Ottley.

February 8 (*Wed.*).—Railway Students' Association, London School of Economics & Political Science, Houghton Street, Aldwych, W.C.2, at 6 p.m. "The Underlying Principles of the London Plan Working Party's Report," by Mr. A. B. B. Valentine, Member, London Transport Executive.

February 8 (*Wed.*).—Institute of Public Administration, lectures on incentives to efficiency, at the Hotel Victoria, Northumberland Avenue, London, W.C.2, at 6.15 p.m. "Public Relations," by Mr. Leslie Hardern, Public Relations Officer, North Thames Gas Board.

February 8 (*Wed.*).—British Railways, Southern Region, Lecture & Debating Society, at the Social Club, East Croydon, at 5.45 p.m. Debate: "That the steam locomotive has had its day."

February 8 (*Wed.*).—Scottish Society of Students of the Locomotive. Visit to Queen's Park Works, North British Locomotive Co. Ltd., at 7.30 p.m.

February 9 (*Thu.*).—Irish Railway Record Society. Open discussion on railway timetables from the public point of view.

February 10 (*Fri.*).—Institute of Transport, East Midlands Section, at the School of Transport, Derby, at 6.30 p.m. "Railway Public Relations," by Mr. D. S. M. Barrie, Public Relations Officer, Railway Executive.

Railway Stock Market

Business remained restricted, awaiting the outcome of the election. Markets took their cue mainly from British Funds, which after a further rally turned easier earlier in the week, awaiting terms of the Southern Rhodesia loan. Movements in industrial shares were small. Activity in foreign bonds subsided. Further reduction in business was caused by reports that big new issues are being planned by industrial companies after the election.

The English Electric issue of £3,000,000 of 4 per cent. debentures was oversubscribed more than ten times; this has shown the great degree of support available for high-class investment securities offered at prices showing reasonable yields. The English Electric debentures were issued at £99, and in initial dealings commanded a premium of £2 over the issue price.

The uptrend in British Funds will probably be resumed shortly; the assumption has grown that this section of markets is more likely to rise than fall, whatever the election result. Nationalisation stocks have moved closely with other British Funds: 3 per cent. Transport (1978-88) has been active around 89¼ at the time of going to press.

Canadian Pacifics were active around 27⅞, after attention had been drawn to the benefits which the company derives from the devaluation of sterling which have aroused expectations that the dividend will be maintained. Moreover, hopes are growing that Canadian Pacific will be granted higher freight charges.

There has been more falling-off of business in La Guaira and Bolivar stocks, with more profit-taking, while buyers seem to await fresh developments. La Guaira ordinary was 74½ and Bolivar "C" debentures 55. Earlier selling of Leopoldina stocks and of Great Western of Brazil shares was attributed to fears that Brazil will not finally ratify the sale agreements before June. In all cases current market prices seem below probable pay-out terms. Later in the week buyers reappeared for Leopoldina stocks. The ordinary strengthened to 8¼, the preference to 25½, while the 4 per cent. and 6½ per cent. debentures were 89 and 124 respectively. Leopoldina Terminal debentures, after earlier uncertainty, also firmed up, selling around 93½; the ordinary units were quoted at 2s. 6d. Great Western of Brazil after a sharp fall became firmer at 131s.

Manila "A" debentures eased to 74; the 5 per cent. preference were 6s. 3d. Nitrate Rails kept firm at 75s. and tightly held, while Taltal shares were favoured and rose to 16s. 3d. United of Havana stocks lost ground in the continued absence of further news of the take-over talks. Later, however, buyers reappeared and the 1906 debentures showed a partial recovery to 25¼.

Chilian Northern 5 per cent. first debentures marked 28. Costa Rica 6½ per cent. first debentures 50½, and Vera Cruz 4½ per cent. debentures 42½. Antofagasta ordinary and preference sold around 8½ and 46½ respectively. San Paulo 10s. ordinary units transferred around 14s. 9d. and Brazil Rail gold bonds were 42.

Road transport and bus shares remained firmly held and price movements were small, apart from fluctuations in B.E.T. deferred stock, which has rallied to 460. Lancashire Transport were 82s. 6d., Southdown again 125s. and West Riding 66s.

Iron and steel moved little, buyers holding off owing to the nationalisation threat; on the other hand there was again very little selling. Dorman Long have eased to 30s. 10½d., and Thomas & Baldwins to 14s., but Lancashire Steel "A" were better at 31s. 3d. Colvilles sold around 34s. 9d. and United Steel were 26s. 6d.

The view seems to be gaining ground that whatever the outcome of the election, iron and steel shares will rally. Even if there is to be nationalisation, the shares should be worth their scheduled take-over values, and current market prices are in most cases several shillings below these. United Steel, for instance, have a take-over of 30s. 4d., as against the current market price of 26s. 6d.

Locomotive builders' and engineers' shares remained fairly steady, though there was perhaps a tendency to await the important financial results to be published in the next few weeks. Vulcans were 18s. 6d., Beyer Peacock 19s., North British 19s. 10½d., Gloucester Wagon 48s. 9d. and Wagon Repairs 16s. 4½d. Birmingham Wagons changed hands around 28s. 9d., Hurst Nelson were 59s. 3d., Charles Roberts easier at 83s. 3d. Central Wagons 88s. 9d. and North Central Wagons 12s. 6d.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1947/48	No. of week	Aggregate traffics to date: Total 1948/49	Aggregate traffics to date: Increase or decrease
South & Central America	Antofagasta... ...	811	22.1.50	£ 71,190	+ £ 10,190	3	£ 219,974	+ £ 15,650
	Costa Rica	281	Nov., 1949	c908,612	— c111,761	22	c4,798,079	— c300,357
	Dorada	70	Nov., 1949	23,909	— 8,758	48	320,787	+ 14,879
	Inter. Ctl. Amer. ...	794	Nov., 1949	$1,024,981	— $69,512	48	$11,135,106	— $1,030,145
	La Guaira	22¾	Dec., 1949	$95,154	— $20,009	52	$1,262,514	— $11,002
	Nitrate	382	15.1.50	21,227	+ 6,162	2	21,227	+ 6,162
	Paraguay Cent. ...	274	20.1.50	₡138,549	+ ₡25,089	29	₡4,141,266	+ ₡1,111,461
	Peru Corp. ...	1,050	Dec., 1949	$6,786,200	+ $2,633,399	26	$33,795,958	+ $11,248,527
	" (Bolivian Section)	66	Dec., 1949	Bs.10,712,000	+ Bs.2,677,768	22	Bs.62,869,164	+ Bs.10,973,057
	Salvador	100	Oct., 1949	c68,000	— c14,000	17	c313,000	— c16,000
	Taltal	154	Dec., 1949	14,725	+ 5,825	26	75,705	+ 28,285
	United of Havana ...	1,301	11.6.49	$231,311	+ $14,746	49	$13,733,928	— $4,659,951
Canada	Canadian National†	23,473	Dec., 1949	15,090,000	+ 83,000	52	166,908,000	+ 3,151,000
	Canadian Pacific† ...	17,037	Dec., 1949	10,039,000	— 320,000	52	151,084,000	+ 2,667,000
Various	Barsi Light* ...	167	Dec., 1949	28,928	+ 4,425	39	267,533	+ 19,875
	Egyptian Delta ...	607	31.12.49	21,537	— 2,154	39	513,033	— 43,593
	Gold Coast ...	536	Nov., 1949	271,799	+ 32,376	36	1,894,985	+ 246,278
	Mid. of W. Australia	277	Nov., 1949	31,973	+ 1,942	22	141,839	— 1,905
	Nigeria	1,900	Oct., 1949	632,907	+ 115,113	30	3,360,709	+ 216,792
	South Africa ...	13,347	7.1.50	1,234,520	— 48,357	40	59,554,033	+ 5,063,817
	Victoria	4,744	Oct., 1949	1,792,078	+ 371,156	17	—	—

* Receipts are calculated @ 1s. 6d. to the rupee † Calculated at $3 to £1